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Gleanings in Bee Culture

VOL. XXXVII

NOVEMBER 1, 1909

NO. 21



Opening the hives for the last time at "The Home of the Honey-bees" to see if there are sufficient winter stores.

PUBLISHED BY

THE A. I. ROOT COMPANY, MEDINA, OHIO, U. S. A.



Farm and Home

Twice a month--twenty-four copies a year.

The paper is just what its name indicates, a spicy, practical, up-to-date magazine. It covers every thing that pertains to the farm, big or little, in country or village. It smacks so of the soil that town and city folks also like to read it. It gets right down to business, is full of snap and go.



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Herbert Myrick is editor-in-chief, assisted by capable editors in each department, and a splendid list of contributors—men and women who know how, who tell how in few words—nothing long-winded, no theory, every line full of meat, sound sense, and wisdom.

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These include the farm, gardening outdoors and in, sheep, swine, cattle, horses, dairying, poultry-yard, buildings and machinery, fruits and vegetables, business side of farming, crop reports and markets, veterinary, notes among farmers.

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It gives the best, newest, and most reliable jottings upon household problems, cooking recipes, home-made contrivances, fashions, and dressmaking, embroidery, boys and girls, mothers and daughters, fathers and sons.

A great story began in *Farm and Home* with the September 15th issue entitled "Weed and War," a romance of the Kentucky Night Riders in 1909. A most thrilling, fascinating story. A complete short story and fun in each number. World's Progress is alone worth the price of the paper. Also its legal advice, educational and "How to Live" departments.

It is bright, clean, reliable, all the way through. Profusely illustrated, popular in both country and town. Mr. Myrick's editorials and chat with the editors are fearless, complete, full of ginger, and exert a profound influence. One of the oldest journals of its class, it is so popular east and west, north and south, as to have the largest circulation.

By a fortunate arrangement with the publishers, we are able to offer this magazine, for one year, together with a subscription to GLEANINGS IN BEE CULTURE for one year, for only \$1.00. GLEANINGS is also a semi-monthly, so that you will get forty-eight copies of these two very excellent magazines for only \$1.00. If you are already a subscriber to GLEANINGS, you may have your subscription advanced a year; or, better still, have GLEANINGS sent to a friend, and *Farm and Home* to yourself. Fill out the coupon and enclose a dollar bill—or stamps, if you like—and be assured of some good reading matter for the next twelve months. New subscribers who send in their orders at once may have their GLEANINGS subscription date from January 1, 1910, and we will send the numbers for the rest of this year free of charge. This will include our special Christmas number.

The A. I. Root Co., Medina, O.

For the enclosed \$1 send Gleanings and Farm and Home as follows:

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The A. I. Root Co., Medina, Ohio.

A YEAR'S WORK IN AN OUT-APIARY

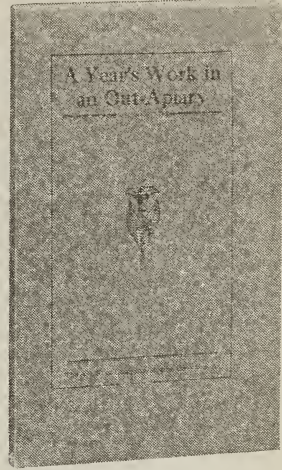
.. OR ..

An average of 114½ pounds of honey
per colony, in a poor season,
and how it was done.

First edition, Dec., 1903, 1000 copies.
Second edition, Jan., 1909, 3000 copies.

By G. M. DOOLITTLE

Author of "Scientific Queen Rearing."



Mention has already been made of this book in our reading-columns; but there is such an unusual interest in it that we call attention to it once more.

To understand the scope of the work better, please notice that it contains the following chapters:

- Chapter I. An average of 114½ pounds of section honey per colony in a poor season, and how it was done.
- II. Same, continued.
- III. Bloom time.
- IV. How to control swarms when running for comb honey.
- V. A simple and reliable plan for making increase.
- VI. How to save unnecessary lifting in taking off filled supers of honey.
- VII. Taking off the surplus; what to do with the unfinished sections, preparation for the buckwheat flow.
- VIII. Progress in the supers.
- IX. A simple way to put on escapes without lifting.
- X. Taking off the Honey and storing it at the outyard.
- XI. Same, continued.
- XII. Closing words; further suggestions to the plans given in the preceding chapters.

The author says in the preface:

While the book is intended for the specialist, it is none the less desirable for the plain, every-day bee-keeper, with his one home apiary, or for the amateur with his five to ten colonies; and because this book is for the specialist in bee-keeping I have not gone into first principles or the A B C of our pursuit, as the specialist has passed these rudimentary things long ago. There are plenty of good books before one, and all who are desirous of learning of the foundation structure, therefore, have no need of repeating here. The amateur should certainly procure, read, and digest one or more of these books upon entering the ranks of apiculture.

What Mr. W. Z. Hutchinson, editor of *The Bee-keepers' Review*, says:

"A Year's Work in an Out-apiary" is packed full of the most valuable information that has ever been given to bee-keepers. Like a few other books, it is a difficult one to review. It is so boiled down and condensed that there is very little that can be left out. I am going to do the best I can at it, but I'll say right here that every bee-keeper would do much better to buy the book and read it in its entirety. While the book is really a record of one year's work (12 visits) in an out-apiary, in which, during a poor season (1905), 114½ pounds of section honey per colony were secured, it is descriptive of a plan that was perfected during some ten or fifteen years of previous experimenting. To put the whole thing in a nut-shell, it tells-how to manage an out-apiary for the most profitable production of comb honey, and, at the same time, prevent all swarming.

The
A. I.
Root
Co.,
Medina,
Ohio:

For the en-
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If you are already a subscriber to GLEANINGS, and your subscription is paid, and you want to get the book, take advantage of offer No. D2 by ordering the book for yourself and a six month's trial to GLEANINGS for some one of your bee-keeping friends who is not now a subscriber.

THE A. I. ROOT CO., Medina, O.

If *Gleanings* is to be sent to same party as book,
sign only in last two blank lines.

Name _____

Address _____

Send Doolittle's book, my address
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Address _____

Honey Markets

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise, all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A NO. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

NO. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

NO. 2.—Three-fourths of the total surface must be filled and sealed.

NO. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separated honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separated honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped

cells, exclusive of outside row, permitted in this grade, wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separated honey to average not less than 19 pounds net.

Cases of half-separated honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 21 pounds net per case of 24 sections.

BOSTON.—We quote fancy white comb honey, 16 to 17; No. 1 ditto, 15 to 16; fancy white extracted, 9 to 10; light amber, 7 to 8; amber, 6 to 7. Beeswax, 32.

Oct. 22.

BLAKE-LEE CO.

INDIANAPOLIS.—There is a good demand for best grades of honey, with market fairly well supplied. For fancy white comb honey producers are being paid 16 cents; for No. 1 white, 14; finest extracted in 5-gallon cans, 8. No demand for amber or off grades. Producers of beeswax are receiving 28 to 30 cents.

Oct. 18.

WALTER S. POWDER.

ALBANY.—The honey market is firmly held on short-crop news; but the consumptive demand will not stand very high prices in these days of cheap sweets. We think it is better to sell at 15 to 16 in quantity for best clover or white grades of comb, and 14 to 15 for mixed, and 13 to 14 for buckwheat and dark, rather than to lose sales. The demand for extracted is better than usual this season, at 8 to 8½ for white; amber, 7½; 7 to 7½ for buckwheat extracted. Beeswax is scarce at any price.

Oct. 23.

H. R. WRIGHT.

ZANESVILLE.—There is a good average demand for best grades of honey. There have been some arrivals of Western honey, but prices remain firm. For white-clover comb, grading No. 1 to fancy, producers would receive from the jobbing trade 14 to 16 cts., delivered here. Such honey goes to the retail grocery trade at 2 to 2½ cts. advance over the above prices. The chief demand for extracted honey on this market is for that in glass packages, which I quote at \$2.25 per dozen for full pound jars, and 90 cts. for the ten-cent size. For best white-clover or raspberry honey in five-gallon cans I offer 8½ delivered. Good yellow beeswax now brings on arrival 28 cts. in cash or 30 in exchange for bee-supplies.

Oct. 18.

EDMUND W. PEIRCE.

NEW YORK.—The demand is good for comb honey of all grades, especially for No. 1 and fancy white stock. While receipts are not quite as heavy as in former years they are sufficient to meet the demand. We quote fancy white at 15; No. 1, 14; No. 2, 13; amber and mixed, 11 to 12; buckwheat, 11 to 13, according to quality. Strictly fancy lots, in a small way, bring a little more than the above. The demand for extracted honey is good. Receipts are quite heavy, especially from California. We never saw the quality better. Water-white sage is quotable at 8½; white sage, 8; light amber, 7 to 7½; amber, 6 to 6½; clover and basswood, 8 to 8½; dark and buckwheat, 7 to 7½; Southern in barrels, 65 to 75 per gallon. Beeswax is dull and quiet—28 to 29, according to quality.

Oct. 23.

HILDRETH & SEGELKEN.

Honey Markets continued on page 5.

DELICIOUS HONEY. . . .

Our second car of Sage Honey has arrived. The first sold like "hot-cakes" in crates of two 60-pound cans at 9½c per pound.

Sample, 10c. Truly if you ever ate fine honey
you will say this is par excellence.

THE FRED W. MUTH CO.

"The Busy Bee-men"

51½ Walnut Street

Cincinnati, Ohio

...HONEY...

The present season has been a poor one for honey in many sections of the East. We are not dependent upon Eastern markets, however, for, in addition to our Eastern stocks, we have secured several cars of honey from California. Please do not think that, because we have Western honey, it is inferior in quality. On the contrary, we have some of the finest honey ever produced, and a sample shipment will convince you of its quality. We can supply either comb or extracted, water-white or amber. Write to-day for prices and samples.

If you have been so fortunate as to secure more honey this season than you can use, we shall be glad to hear from you. State what kind it is, how it is put up, and lowest price you expect for it delivered in Cincinnati. Do not ship without definite instructions, for we are taking in honey every day and may not have much storage room.

We also have our usual complete line of bee-keepers' supplies. Send in your orders now and get the benefit of the November cash discount, which is five per cent. Our goods are fresh and clean, and the best on the market. Catalog on request.

~~~~~

**C. H. W. WEBER & CO.**  
2146-2148 Central Avenue, Cincinnati, Ohio

# GLEANINGS IN BEE CULTURE

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# Extracted Honey Wanted

We are always in the  
market.

If you have any to sell, mail  
small average sample to

**NATIONAL  
BISCUIT COMPANY**

Purchasing Department,  
205 La Salle St., Chicago, Illinois.

## *Honey Markets continued.*

CHICAGO.—There continues to be a fair trade in honey, and prices are steady for both comb and extracted. A No. 1 to fancy comb is ranging at 16, with No. 1 at 15; other grades range from 1 to 3 cts. less per pound; extracted white, 7 to 8, according to kind, quality, and flavor, with ambers from 6 to 7. Beeswax, 30 to 32.  
Oct. 22.

R. A. BURNETT & Co.

CINCINNATI.—The demand for both comb and extracted honey is better than it has been for several years past. There is a wonderful demand for comb honey especially, and we are selling it in lots of from 50 to 150 and 200 cases at 14½ to 15, and by the single case from the store at from 16 to 17½; amber extracted honey in barrels, 6 to 7½; white-clover and sage, 9 to 9½. We want your beeswax at 29 cts. cash delivered here, and money back the day the shipment arrives.  
Oct. 22.

THE FRED W. MUTH CO.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds

If you have any to dispose of, or if you  
intend to buy, correspond with us.

We are always in the market for WAX  
at highest market prices.

**HILDRETH & SEGELKEN**

265-267 Greenwich St., 82-84 Murray St.  
**NEW YORK**

## Hurt-Cain Company

Incorporated

**37 Vance Avenue, Memphis, Tennessee**

BROKERS in Comb and Extracted Honey. We never buy honey ourselves, but sell only for shipper's account. We therefore obtain the highest prices our market will pay. Consignments of choice comb and the better grades of extracted solicited. Liberal advances, honest service, and prompt returns.

SCHENECTADY.—There has been no material change in our market conditions since our last reports. The best white-clover comb honey is selling at 15 cts., and grades under that, 13 to 14; buckwheat, 11 to 12. The demand for white extracted is not quite so good, as most dealers have secured their supply for present use. Dark is unchanged. We quote white at 7½ to 8; amber and dark, 6½ to 7. Producers should write us before shipping us their honey, as certain grades and sizes of sections sell better than others in our market.  
Oct. 23.

CHAS. MACCULLOCH.

CHICAGO.—Since the first of the month we have noted quite an improvement in the honey situation as regards both comb and extracted honey. Stock is moving out well, and prices we are realizing for shippers are satisfactory. We quote comb honey, fancy white, 15 to 16; No. 1 white, 14 to 15; No. 2 white and light amber, 13 to 14; medium amber and off grades, 10 to 12; fancy buckwheat in good demand at 12 to 13. We quote extracted honey, fancy white clover and basswood, in barrels, kegs, or cans, 7½ to 8½; light amber in 60-lb. cans, 6 to 7; fancy Utah water-white alfalfa, 7½; Southern California light amber in 60-lb. cans, two to the case, 7. Bright pure beeswax is firm at 30 to 32.

Oct. 14.

S. T. FISH & Co.

*Continued on page 21.*

# HONEY!

**DADANT & SONS**  
Hamilton, Ills.

If your white-clover crop is short, and you want some good honey to supply your customers, we can offer you White Alfalfa Honey at the following prices:

One 60-lb. can - 10c per pound  
Two 60-lb. cans or more, 9c  
Ten 60-lb. cans or more, 8½ " "

This honey is put up in new, bright cans, neat and clean, and we can guarantee it in every way. . . .  
Sample by mail 5 cts. to pay postage.

# GLEANINGS IN BEE CULTURE

Devoted to Bees, Honey, and Home Interests

Established 1873

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72 pages Semi-monthly

A. L. BOYDEN, Advertising Manager

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# TWO YEARS FOR \$1.00

As a rule, persons subscribing for the Review after the beginning of the year ask for the back numbers so that they may have a complete volume; and extra copies are always printed to supply this demand. That no one may be disappointed, more copies are printed than probably will be needed. At present I have nearly 200 complete sets for 1909, and rather than allow them to cumber my shelves, and gather dust year after year, I prefer to have them out doing good; hence, as long as the supply holds out I will send a complete set to each one who sends me \$1.00 for the Review for 1910.

Back numbers of the Review are different from those of newspapers and some journals. The information that they contain is just as valuable now as when first published. It is impossible on this page to give much description, but I will mention some of the articles that appear in the Review for 1909. They are as follows:

## The Gravity Strainer.

It is more or less of a "bother" to strain honey through a cloth, to wash the strainer, etc., and it is possible to avoid this. One issue of the Review in the past year illustrates and describes two very simple forms of a gravity strainer, whereby the use of a cloth is entirely avoided.

## Tarred-Felt Protection.

The use of tarred felt as a winter protection for bees has been discussed somewhat, and a lady bee-keeper of Wisconsin, Miss Mathilde Candler, has used it successfully for several winters, and she has told in the Review exactly how she uses it. There is a full-page illustration of her apiary thus protected.

## No Brushing nor Shaking.

It is not always possible nor desirable to use bee-escapes; yet it is often necessary to remove honey for extracting at a time when robbers give trouble; and S. E. Miller has a decidedly novel method of accomplishing this with no brushing nor shaking; and he describes it in the Review for this year.

## 129 Colonies—20,000 Sections.

In the year 1908 Dr. C. C. Miller produced nearly 20,000 sections from 129 colonies, and in a three-page article he goes briefly over the ground from start to finish, telling how the feat was performed. No comb-honey producer can afford to miss this.

## The Newer Inventions.

In our Northern Michigan apiaries we have this year been trying an uncapping-machine, a steam-heated uncapping-knife, and two capping-melters, and in the Review is told the story of our experience with these innovations—one failed; and, with slight changes in one, the other two were brilliant successes.

## More Money by Frequent Extracting.

There are two methods of producing extracted honey—that of tiering up and then extracting at the end of the season, and that of frequent extracting. The latter method secures more honey (so it is claimed), and the former gives a superior product (according to its advocates), and those veterans, M. V. Facey, Harry Lathrop, and J. L. Byer, argue the matter and give their experiences and views on this all-important point.

## No Drifting.

As usually managed, carrying bees out of the cellar in the spring is a disagreeable job—the bees rush out and mix up, and sometimes there is loss from their "drifting" to other parts of the yard. All this may be avoided, scarcely a bee leaving the hive, when carrying them out, and they will begin to fly gradually, with no mixing. My brother Elmer has an article telling how this may be accomplished.

## The Story of a Season.

My brother Elmer has for three years had the management of our apiaries in Northern Michigan, and last spring he began, in the Review, the story of a year's campaign—beginning with taking the bees from the cellar, and going along, step by step, until the bees were back again in their winter quarters. If you wish to know how our five apiaries are managed for extracted honey, read this story.

## Turning Bees Into Honey.

There is often an opportunity to buy, at a low price, one or more lots of bees in box hives, or those with odd-sized frames; but there may be little profit in moving them home, transferring, Italianizing, etc. There is, however, a sort of off-hand method, one requiring little labor, of turning those bees into honey right on the spot. At the end of the season very few bees will remain, but there will be a lot of extracted honey and empty combs. It may not be *bee-keeping*, but it is certainly *money-making*. Mr. E. B. Tyrrell has done this several times, and he tells about it in this year's Review.

## A Mail-Order Trade.

For many bee-keepers there is a better way of selling honey than that of sending it to jobbers or commission men, or bottling or peddling it, and that is by developing a mail-order trade. It is not necessary even to leave one's home, yet good prices may be obtained. Mr. H. C. Ahlers, of Wisconsin, has built up such a trade, selling thousands and thousands of pounds each year, and he has told in the Review exactly how the trade was built up.

## Memories of Langstroth.

One of the most graphic (yet touching and beautiful) pieces of writing that ever appeared in the Review, is a sketch of Father Langstroth's life by Jennie Brooks, who was his neighbor and loving friend from childhood to womanhood. It has given me a clearer view of this wonderful man than anything else I ever read. It is accompanied by a full-page portrait of Langstroth taken in his 82d year, probably his last photograph, also a picture of the old Langstroth home, as well as a view of the old apple-orchard where once stood the Langstroth apiary.

## Getting Higher Prices.

"The bee-keeper who has harvested a crop of extracted honey fit for table use has gone only half way toward the coveted goal of 'The Highest net Profits upon the Investment and Expenses of Operating the Apiary.'" Such is the opening sentence of an eight-page article by O. L. Hersher, who takes for his title "Improving Market Conditions by the Bottling of Honey." In this article he tells how he has nearly doubled the income from his apiaries by bottling the product and selling it to grocers, and this without the elaborate equipment employed by extensive bottlers. Minute details are given from the liquefying of the honey to the making of sales.

Send me \$1.00 and I will send you the back numbers, place your name on the subscription list, and continue to send you the Review to the end of next year.

For ten cents I will send you three of these back numbers, different issues, and the ten cents may apply on any subscription you may send in later; will also send a specially low clubbing offer.

W. Z. HUTCHINSON, Flint, Mich.



# Removal Sale!

**C**ONTINUAL growth, hard work, and constant digging after business, forces us to secure larger quarters. We have disposed of our present place of business at 1322 South Flores Street, where we had a building 40×250, and which was not nearly large enough for us, and we found it necessary to put up a building just twice the size of our present one. We have let the contract for our new building, in which we shall have 20,000 square feet of floor space, and shall be in position to carry a larger and more complete stock of Root's Goods than ever before. Our foundation-factory will also be rebuilt and placed on our new site, and will be built better and more complete than ever before. We are glad to state that now we are on the Southern Pacific Railroad, which has built a track right along where our new building is going up, which reaches nearly every point to which we ship. Heretofore we were very much handicapped, and many shipments were delayed because we were on a road which could not handle our shipments promptly. We can now concentrate honey shipments, make good time, and give the very best service to our customers that can be had. Our customers who heretofore called at 1322 So. Flores St., can in the future obtain goods and information, and sell their wax, at our branch, 607 South Flores Street. We have a number of customers south from San Antonio who bring honey in wagons; such customers, as a matter of convenience to them, can deal with our branch, 607 South Flores Street, where they will receive the same prompt attention as they did at 1322 South Flores. Our friends who visit the city, and who find it inconvenient to go so far out as 1322, can easily call on us at 607 South Flores, as this is only two blocks from the county courthouse, and located directly opposite the United States Arsenal, on South Flores Street. If you wish to pay us a call at our new warehouse or general office, you can reach us by taking the Nolan Street car, getting off at the subway, corner of Nolan and Cherry Streets. Our office fronts Nolan Street, right where the car stops. Now, since we have gone to such heavy expense and so much enlarged our business, we sincerely hope that we shall be in position to please our friends and customers so well that they will induce their neighbors to trade with us in the future. We are the only firm in the South that keeps such an immense stock always on hand ready for prompt shipment, and fill our customers' orders promptly when goods are needed most, and for that reason we are entitled to all the trade that can be given us.

Thanking all of our friends who helped to build us up by favoring us with their patronage, and wishing all of our brother and sister bee-keepers much success and happiness, we remain

Yours very truly,  
San Antonio, Texas.

UDO TOEPPERWEIN,  
W. M. MAYFIELD.

Headquarters for  
**NEW YORK  
 STATE**

Bee-  
 Supplies  
 of  
 All  
 Kinds.

**THE A. I. ROOT CO.**  
 SYRACUSE, :: NEW YORK

**Hilton's Strain of  
 Bees Heard from  
 Again. . . .**

In 1908 I bought two three-frame nuclei of you, and in 1909 three more. I now have twenty good colonies ready for winter, and have taken 871 pounds of extracted honey, and they have drawn their own combs from full sheets of foundation. Hilton's strain of bees and Root's goods can't be beat, and you do sell them at factory prices.

G. C. CHASE, Robbins, Wis.

*Friend Hilton:*—I increased the 10 three-frame nuclei I got of you last spring to 21 full colonies and took off 1120 finished sections and 132 unfinished, of fine honey, and had it not been for the early frost would have had much more.

M. D. CAVEN.

Bergland, Upper Peninsula, Mich.

I have sold more queens and nuclei now for spring delivery than I sold last season. Send for 40-page catalog, free, with discounts for early orders on bees, queens, and supplies.

All Root's Goods at Factory Prices.  
 Send List of Goods Wanted, and Get  
 Net Prices. . . Beeswax Wanted.

**GEO. E. HILTON, FREMONT, MICHIGAN**

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Liberal discount given on  
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Quotations are supplied  
 promptly showing you the  
 net cost of your order.

We are paying top-notch  
 prices for beeswax—cash  
 or trade. . . . .

Seasonable goods—ship-  
 ping—cases, feeders, etc.  
 —at your call. . . . .

OPPOSITE THE LAKE SHORE DEPOT  
**LANSING, MICHIGAN**



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 .. for ..  
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My stock of goods is the largest and most complete carried in the West, and with carloads being continually added I am in position to meet every want of the beekeeper with promptness and satisfaction.

We sell **ROOT'S GOODS** here at Des  
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Send for catalog to-day, or send us a list of the goods you need and we will name you prices, according to quantity, by letter.

Address **JOSEPH NYSEWANDER**  
 565 and 567 W. 7th St. **DES MOINES, IOWA**

## AS THE ADVERTISING DEPARTMENT SEES IT

### WHAT CONSTITUTES A GOOD SUBSCRIBER?

At first thought, one would naturally suppose that a good subscriber is one who does not allow his subscription to lapse, who is appreciative of the efforts of the editorial staff, and who occasionally sends in a new name or a glowing testimonial. A good subscriber does all of these things, of course, but we want something else from our subscribers. On this we quote the following from an article which appeared in a recent issue of that excellent magazine, *Advertising and Selling* :—



“Opinions differ, which is fortunate, as this is ‘what makes horse-racing possible;’ but what I want for a good subscriber is a live reader who will applaud good work when it is worth applause, who will criticise bad work, and be always alert and alive to the best interests of himself and his field; who will catch errors and will question statements that are open to question. With such a man there will be no difficulty about his subscribing for the paper, if it is the right kind of paper, and there will be no trouble about his paying for a paper that is worth his while. He will be looking for new ideas, and will, therefore, be open to the suggestions of advertisers, and will read, or at any rate will look over, the advertising pages; and the only really good subscriber is the man who reads the advertising pages, and has the ability to buy or to direct the buying of advertised goods.”



Now, we want every subscriber to GLEANINGS to be a good subscriber in the broadest sense of the word. A little just criticism put in the right spirit will not hurt any one, and we will try to profit by such.

By soliciting only such advertising as we think will appeal to our subscribers, by refusing any that we deem unfit to put before them, by a careful arrangement of copy and illustrations, we try to make our advertising pages so attractive that a reader can hardly help reading them. With the diversity of advertising now carried, there is scarcely an issue in which you will not find something advertised that you want, something that will help you in your work, or add a convenience to the house, or bring additional profits to you. Even if you are not quite ready to buy, or have thought of buying some other make, just send a postal-card inquiry to the advertiser, mentioning that you saw the advertisement in GLEANINGS, and find out what kind of proposition you can get. Perhaps the proposition will be so attractive that you will want to send your order at once, or you will get so much information regarding the goods that you will buy in spite of yourself. Be sure of this, that the man who advertises is usually the one who has the best goods to sell. If his product isn't up to the mark, his advertising will find him out, for advertising demands a perfectly square deal.



## AS THE ADVERTISING DEPARTMENT SEES IT

And let us repeat right here what we have so often said before, it is the advertising pages of a magazine which bring the real revenue. Large advertising contracts mean a paper more attractive to every subscriber in all departments, not only in the advertising pages themselves, but in the editorial and reading pages as well. Advertising contracts can not be secured without the co-operation of every subscriber on the list. Read the advertising pages as carefully as you do the rest of the paper; patronize advertisers whenever possible; speak a good word for the paper always, and we will increase its attractiveness and value to you a hundred fold.



For instance, within the next two or three months, we would like to increase our subscription list by an even ten thousand names. Now, every subscriber can have a part in this campaign. We don't know the bee-keepers in your vicinity, nor what their circumstances are, but you are right on the ground and by a little diplomacy you can probably secure a good many names. We are always glad to send a few extra copies to be distributed among friends and we will coöperate in every way with your efforts. You know enough about GLEANINGS to know that every bee-keeper can profit by reading the paper.

If we can secure this additional ten thousand paid-up subscriptions, the extra revenue resulting will enable us to make your paper that much more attractive. You understand, of course, what an immense expense it is to get out a paper like GLEANINGS, printed as it is, finely illustrated, and containing a good many paid articles. Our paper-bill alone is enough to eat up a good many hundred subscriptions. Now, there are certain fixed expenses whether we print thirty-five thousand or fifty thousand.



We will say, for example, that on the first thirty-five thousand we make nothing above our operating expenses. You see besides the actual material used in the paper we have to pay the people who do the work. There are typesetters, proof-readers, pressman, stitchers, folders, and trimmers, besides a good many other faithful people who handle the paper before it finally goes to you in its present shape. It costs a great deal of money too to gather the data needed for the interesting articles published and to take and print the illustrations. Our photograph department is at work nearly every day getting interesting and instructive views to illustrate properly the matter to be published.

Now, if we are able to give to you the paper we do with our present subscription list, you can see how much better we could do if we had that additional ten thousand names. Our expense in getting the paper out would be but very little more than it is at present, and we would have just that much more to put back into the paper in the way of new departments, articles, and illustrations.

We want every one of our subscribers to be as enthusiastic for a bigger and better GLEANINGS as we are. The paper is yours to improve if you will. Will you carry out your share of the plan by securing at least one of the ten thousand new names?

"If Goods are wanted Quick, Send to Pouder."

Established 1889

## A HONEY ORDER MISUNDERSTOOD

By the Bee Crank



Luther Burbank, the plant-wizard of California, supplies the following item: A certain flower, growing abundantly near Santa Barbara, is a source from which the bees store honey of a very superior quality and flavor. A young Californian who often visited a Santa Barbara hotel just to partake of this delicious honey got married, and in due course the wedding-trip was arranged to include a stop at this hotel that the bride might partake of this delicious honey. But the first morning at the hotel there was no honey on the table. Calling the old familiar waiter, he asked, "Where's my honey?" The waiter hesitated, looked awkwardly at the bride, then in a stage whisper stammered, "My dear sir, she don't work here any more."

I have heard a great deal about orders being misunderstood; but in my business every order has my own personal attention, and I have been at it for more than twenty years. If you could call in person and see for yourselves the large clean stock of new goods ready for immediate shipments you would not hesitate in placing your orders, and at this season I am offering very liberal discounts to those who wish to order early.

Speaking about honey, if Mr. Burbank's friend wants to taste something fine, I can assure him that I have what he wants, and the largest stock that I ever had on hand at one time. I would be glad to furnish you with quotations and samples.

For beeswax I am now paying 28 cts. cash or 30 cts. in trade.

I should like the pleasure of mailing my catalog of bee-supplies to you, and I send it free of charge.

**Root's  
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at  
Root's  
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with  
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**Walter S. Pouder, Indianapolis, Indiana**

859 Massachusetts Avenue

# GLEANINGS IN BEE CULTURE

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## EDITORIAL

By E. R. ROOT.

### FALL DROUTH AND CLOVER.

In the *American Bee Journal* for October, Mr. J. L. Byer, in his department, "Canadian Beedom," says:

Somehow, those who are saying 'I told you so,' when the matter of drouth killing clover is mentioned, would better explain how Ontario has a real good crop (barring a few localities), this season, after one of the worst drouths last year that has ever been experienced. To help them out a bit, I might say that most of the honey referred to was gathered from the alsike clover. However, it was not *last year's* drouth that stopped the white clover from blooming in this season, as last spring the clovers showed up as well as ever in April or May. Since the latter end of May, though, the drouth in Ontario had been very severe, and clover never came to the blooming stage. Alsike in the cultivated fields stood the dry weather better, and yielded very heavily a few days.

But over against this, Mr. C. P. Dadant, in the same journal, says:

Of all the wise men who have tried to forecast possible large crops, I have the most faith in the one who said that the best white-clover crop comes when the clover is in its second year following seasons of entire dearth. I have noticed this several times; but, of course, there had to be a sufficient amount of moisture to keep the plants growing.

### SHADE AND THE ARRANGEMENT OF HIVES.

At our Clark yard we have our hives arranged in several groups in the form of a circle around the apple-trees. In each circle, or around each tree, there will be anywhere from five to ten colonies.

The arrangement is very convenient for working with the hives, because one can have his feeders, his chaff trays, his division-boards, or a supply of syrup in the center almost within reaching distance of any one of the hives in the group. But it is not altogether advantageous to the individual colonies, for the reason that the bees mingle more or less, the stronger stocks absorbing from the weak (because the entrances are so nearly alike), and for the further reason that those hives on the north side of the tree get too much shade. This reminds us that we found those colonies which had the larger amount of stores were located more out in the open, where the shade was scant or entirely lacking; while those under the dense shade or on the north side of the trees had a less amount of stores, thus proving out the observation and experience of our Mr. Bain at our home yard.

### GETTING HONEY OUT OF PARTLY FILLED EXTRACTING-COMBS INTO HIVES NEEDING STORES, WITHOUT THE USE OF THE EXTRACTOR OR FEEDER.

MR. FRIEDMAN GREINER, in the *Bee Journal*, solves this problem very nicely by making a pile of supers, containing such combs, and placing the same on a regular bottom-board. This pile he stations in the rear of a hive that needs stores, then shoves the needy hive backward on its bottom, and close to the supers so that there is an opening between the needy hive and the combs to be emptied. Although he does not say so in just so many words, we take it that this stack of supers is shut out to all bees except the colony to be fed.

This pile of supers, he explains, should be arranged at night when the bees have ceased flying, otherwise a case of robbing would ensue. By morning the bees will have partly cleaned up, and be on their guard.

These combs may be thus left until it is time to take the bees into the cellar. The needy colony will be supplied with stores from the partly filled combs, and in addition the combs themselves are protected from the moth-miller until they are otherwise disposed of.

### "HEFTING" HIVES TO DETERMINE THE AMOUNT OF FEEDING NECESSARY.

SOMETIMES, if it is a little late, we "heft" the hives in our outyards by lifting up the front or rear to determine the relative weights—that is, whether they have sufficient stores for winter. A little experience will enable one to arrive at a fair conclusion *provided* the colony is not too strong in bees. Note that we put in a proviso. Right here hefting would very greatly mislead unless the "hefter" had an accurate knowledge of the bee force within the hive. Hives might be heavy, and, in fact, contain considerable honey, but an amount altogether inadequate for a large force of bees; so for this hefting we must have some idea of the number of bees.

But some one says this guess-so method of determining the amount of stores in a hive is all wrong, and that a pair of scales must be used instead. But even scales are misleading. If one has been working an out-yard pretty much all the season, and the records are available, he can determine, by lifting, the relative amount of stores required for each hive.



This fall we went through two of our out-yards, hefting each hive. As we did so, we marked on the cover, with a piece of chalk or crayon, in pounds the amount of syrup that would be required to put the colonies in good condition; then with the automobile we drove down with a big load of syrup, poured the feed into the feeders, then after they had all been fed the proper amount we went over the hives, this time opening them up and examining the frames to determine the strength of the colony and the amount of stores in the combs. This later examination is for the purpose of rectifying any mistakes that might have been made by hefting. On several occasions we found the colonies were stronger than we had supposed and of course required more feed than we had marked on the cover.

Since writing the foregoing we find that Elmer Hutchinson (all of whose writings may be read with profit) has been practicing this "hefting" scheme to determine the amount of stores required. It is an old, old trick of the trade, but a good one just the same.

#### UPWARD VENTILATION OR SEALED COVERS; THE SWING OF THE PENDULUM.

EVERY now and then there seems to be a sort of consensus of opinion pointing in a certain direction. A few years later that consensus will sometimes point in the opposite direction; so the pendulum swings, much to the confusion of beginners.

Some years ago there was a sort of agreement, we thought, that colonies under sealed covers packed in chaff or other material gave better results than those under covers like burlap that allowed the moisture to pass upward, making the cushion damp or frosty later on.

For something like ten or fifteen years we tested the two kinds of packing side by side in our yard. See back volumes of this journal. One set of colonies would be under sealed covers and the other under absorbing cushions. One year, and only one, the absorbent scheme gave slightly better results; but the following years seemed to point strongly in favor of a sealed cover with plenty of packing material over it, while the absorbing cushions of the others were wet, and the colonies inclined toward dysentery.

Lately the pendulum seems to be swinging somewhat the other way. Some months ago our old friend W. L. Coggshall, supported by two or three other bee-keepers of large experience, strongly dissented from the accepted opinion that the sealed cover for outdoor-packed colonies was *the* thing, and in the last *Bee-keepers' Review*, Mr. Hutchinson, backed by his own experience, seems to feel that the weight of testimony favors the absorbing cushion as against the sealed cover.

We are beginning to suspect that this question of absorbent v. non-absorbent is largely a matter of locality and the amount of packing used. In and around Medina we have seemed to prove that the sealed cover is much to be preferred to the loose porous burlap under the cushion, that becomes, in

late winter and early spring, a damp, wet, and sometimes a frosty mass.

This is a seasonable topic, and we invite further discussion. Give your experience and your convictions, whether they happen to coincide with those of the editor or his force at Medina. The truth is what we want.

#### GROWTH AT THE HOME OF THE HONEY-BEES.

If the visitor were to call at Medina at the present time he would see a big force of men putting up an immense fire-proof warehouse, all of concrete and brick, three stories high, of the sky-scraper type of construction, and another gang otherwise improving and revamping the other buildings. Something like \$30,000 worth of new equipment and buildings will be put in this fall. The changes that will be made will bring the total warehouse capacity up to about 37,000 square feet of floor space; packing and assembling department, 32,000; manufacturing, 30,000; publishing and office building, 14,000; making a grand total of about 113,000 square feet of floor space.

The adjoining lumber-sheds, with a roof area of 30,000 square feet, in addition to the 113,000, have a storage capacity of three million feet of lumber, while the lumber-yards, three in number, occupy several acres. The entire plant now covers, with buildings and lumber, approximately 15 acres of ground, with private trackage passing in between the buildings and lumber-yards, so that scarcely any lumber has to be hauled by wagon.

The new warehouse, like the other buildings, will be practically fire-proof; and the old buildings will have installed in them nearly \$10,000 worth of the latest up-to-date fire-fighting apparatus. The plant, by Dec. 1, will be as perfectly equipped for fighting fire as almost any to be found in the United States.

Fires are expensive things. They are expensive because the insurance money does not begin to make good the actual loss, etc., to say nothing of the interruption to business and the disappointment to customers.

Any bee-keeper who desires to go through the plant will be allowed to do so provided he comes to the office and secures a pass. Usually he will be furnished with a guide competent to answer questions and show him all objects of interest.

#### THE NEW BEE DISEASE THAT HAS STARTED IN EUROPE.

ELSEWHERE in these columns we publish a couple of articles, one from Alois Alfonsus, Vienna, Austria, and the other from Dr. C. C. Miller, giving the symptoms of a new infectious bee disease found in Europe. It appears to be highly contagious, and therefore the bee-keepers of America may well look into its general symptoms in order to make sure that it does not get a foothold among their bees.

If this disease is highly contagious it would seem that it might be very easy to transmit it through the mails. Let us suppose that a

number of queen-bees were sent to America from an infected district—that the queens so sent, including their attendants, had this animal parasite in their intestines. Would it not be possible for the recipient of these queens, when he introduced them among his own bees, to introduce the deadly parasite also? The new queen, after she is released, receives lavish attentions from her subjects. If she or the attendants that came with her through the mails voided diseased matter the bees of the hive would speedily contract the disease. Through the constant bodily contact it would be possible for the bees to catch the infection and spread it throughout the entire colony, and from that colony to every colony in the yard.

We have trouble enough now from American and European foul brood. It is highly important that we use every precaution to prevent this new disease from getting a foothold in this country. To that end every queen-breeder and bee-keeper who introduces queen-bees in mailing-cages from Europe should see to it that such imported bees come from districts where the disease does not exist; and he should also exercise the precaution of keeping close watch on the colonies to which his imported queens have been introduced. Many Carniolan queens are sent out from Carniola, a province of Austria. While it is presumed that the disease does not exist in that locality, yet as it is found a few hundred miles from the district from where the queens are imported, American bee-keepers should exercise unusual precautions.

It goes without saying, that the Bureau of Entomology, Washington, D. C., will take every precaution to see that the disease is not spread into this country. It might be well for any bee-keeper who has bees suffering with any form of disease like dysentery to have some individual bees mailed to Dr. E. F. Phillips, of the Bureau of Entomology, who in turn will doubtless turn them over to the bacteriologist, Dr. White, for a scientific examination.

In the mean time we are indebted to Editor Alois Alfonsus, of the *Bienen-vater*, for so kindly transmitting this information, with the photographs, directly to this country. To be forewarned is to be forearmed.

In reference to these two articles, one by Editor Alfonsus and the other by Dr. Miller, we may say that both were written without the knowledge of the other; but the matter is of such extreme importance that we decided to publish both articles together, even if one writer does repeat some things said by the other.

#### WINTERING OUTDOORS IN WISCONSIN BY THE USE OF TARRED FELT; ARE PAPER WINTER CASES IN GENERAL A SUCCESS?

In the *Bee-keepers' Review* for October appears an article by Mathilde Candler, of Cassville, Wis., with an engraving showing how she winters in two-story hives, using ordinary tarred-felt paper as a winter case. She uses two-story hives—that is, she finds

it an advantage, she says, to put on an extra brood-chamber when she takes off the comb-honey super at the close of the main honey-flow. In her opinion the bees winter better in these double bodies because they can move up and away from the entrance. On top of the double story she puts a bee-escape board, and on this, again, a comb-honey super filled with planer-shavings or sawdust. Around the whole from top to bottom she wraps a band of tarred felt, allowing six inches for lap. For the top she provides a cap of the same material, which is neatly folded around the top edge of the tarred-felt siding, the same telescoping over about six inches. In other words, her winter case is made of two parts—a band or cylinder fitting around the sides of the hive, and a cap that telescopes over the whole. The felt is held in place at the laps and folds by a lath nailed on all four sides, only one nail passing through each lath.

She has used this material she says for the last six or seven years, and for the last three years has wintered 300 colonies or more "with but little loss."

But a very important factor, evidently, in this successful wintering is her windbreaks. Both the yards are located against a side-hill which cuts off the prevailing winds, although she says she had equally good results when she used a high-board fence.

As Wisconsin is a State where indoor wintering generally prevails, her success with these single-thickness paper cases is but little short of remarkable. In a one-story hive without a windbreak, with no more protection, we are sure the results would be disastrous; and this brings up the question whether it is not very important to get the cluster as far away from the entrance as possible. In a shallow hive, or one comparatively shallow, like the Langstroth, the cluster is necessarily forced down pretty close to the bottom-board. By using two bodies the cluster goes into the upper one or at a point remote from the entrance; but on the other hand, why is it that we almost invariably find the cluster of bees in front of a single-story Langstroth hive directly over the entrance rather than at the rear of the hive remote from the entrance? In the language of Dr. Miller, we don't know.

We would not advise any one to try Miss Candler's method of wintering on a large scale. There may be something in her particular locality, or windbreaks, that make this sort of wintering possible. Reports, in some cases at least, show that paper winter-cases are not as effective as the double-walled hive with good thickness of packing on all six sides. While we continue to try paper cases on double and single story hives for experiment, we do not find them, *thus far*, at Medina, the equal of wooden cases or double-walled hives where ample thickness of packing is provided. We are fearful that the difference in cost between the paper and wooden cases will be made up in one season in the amount of stores consumed.



## STRAY STRAWS

BY DR. C. C. MILLER

THE TODD HIVE-STAND, p. 641, is entirely new, and as good as it is new.

E. B. KIBBE says, page 612, "Dr. Miller is talking of using splints for part sheets." Beg pardon, friend Kibbe, I tried part splints (5-inch) for full sheets, but it didn't work.

WHEN UNITING, don't forget that a colony moved to a new location will stay put much better if made queenless a day or more in advance. [This trick of the trade is worth pasting in the hat.—ED.]

OFFICIAL REPORTS say that 25 per cent of the cases of desertion come as the result of drink. Gen. Fred. D. Grant says it is in reality 95 per cent, for the other causes assigned nearly all come from drink.

THE CHARGE as to Solomon's wickedness, p. 548, is all true. But the inspiration of the writing does not depend on the perfection of the writer, else none of the Bible is inspired, for none of its writers were perfect. I believe the writings of Solomon contained in the Bible are just as much inspired as any part of the Bible, and I believe the whole Bible is inspired.

IF YOU USE a teaspoonful of tartaric acid with 20 pounds of sugar, p. 622, be sure to have it not heaping but *even* full. But a Michigan man reported granulation with the acid. [We suspect that, under some conditions, granulation will not be entirely arrested unless an excessive amount of acid, which would be harmful, were used. We have very little granulation in the combs, and have never used any acid; but we take this precaution—that the sugar be thoroughly dissolved. The larger the percentage of sugar to water, the more important this is.—ED.]

REFERRING to what Prof. Surface says, p. 623, is it not possible that there is so much difference in honey-dew in different places that bees winter well on it in some places and die in others? [Honey-dew from a given source, we should imagine, would be practically the same in any locality; but the quality of the honey-dew, we think, varies in proportion to the amount of white honey, clover, or basswood, that is mixed with it. A large amount of good honey mixed with honey-dew will make a fair table honey and excellent stores for winter. We should say, then, that the difference was "dew," not so much to the "dew" itself as to the honey that was mixed with the "dew."—ED.]

YOU WANT my experience with swarms that wouldn't stay hived, Mr. Editor, p. 590. I have had no such experience—never had a swarm, I think, object to staying hived. But then you forget that I've had practically no experience with hiving swarms. I don't think I've averaged two natural swarms a year that I hived in the orthodox manner. But I ought to be stood up in a corner for

failing to notice that Mr. Ford *had* tried giving a frame of brood to his swarms. [We do not understand you, doctor. Do you mean to say that, in the production of comb honey, you have practically no swarming? or do you mean that you do not have any swarming-out after the bees have been once hived? If very much swarming is allowed in the yard the bees are likely to get the swarming mania; and a swarm once hived may come out again, no matter how favorable the conditions. The fact that we have had so many questions from our subscribers, asking how to make their swarms stay hived, would indicate that many had experienced trouble.—ED.]

LOUIS SCHOLL, that 1/2-inch midrib, p. 625, is interesting. But the dwarf bees in that case are no proof that the *diameter* of a cell decreases with age, under normal conditions. Those cells were shortened in depth for want of room, the bees having no chance to lengthen them out. Next summer give back to the bees that comb, spacing the combs so the bees will have room to lengthen the cells, and see if you'll not get bees of full size. Of course, if midribs get so thick that cells must be less than normal depth, dwarfing must result. Yours, I think, is the first case on record where that could occur. In combs 30 years old I think I have never found midribs more than 1/8 inch, and I never knew any dwarfing in them. [It was the late R. Wilkin, one of the extensive beekeepers of California, who, a year or so before he died, stated that he had a large number of combs that were thirty years old to his certain knowledge; that the bees hatching from them were just as large as those from new combs. He did not say whether the midrib to these old combs was any thicker than that of new ones. The presumption is that they were somewhat. But if they were not spaced too closely in the first place, the bees would make up for the depth by elongating the cells.]

In 1900 and 1901 there was considerable discussion on this question; and as we now recall it, the general consensus of opinion was that the age of the comb did not necessarily affect the size of the workers hatched from it. Cheshire, in his "Bees and Beekeeping," Vol. I., Scientific, states that, whenever there is an excess of cocoons in the cells or enough to reduce appreciably the diameter of the cells, the bees remove them; but when one melts up old combs in a solar wax-extractor, and sees how these cocoons, after the wax has been melted away from them, stand out in bold relief, he wonders whether the bees actually do remove the cocoons. They certainly do not remove them *all*. But, on the other hand, it may be said that it is not necessary for them to do so.

We are quite inclined to agree with Dr. Miller, that, if Mr. Scholl would space that same comb so that there would be more space between it and the next comb, he would get bees just as large in it as he would from the other combs. The experiment is worth the trying.—ED.]



## BEE-KEEPING AMONG THE ROCKIES.

BY WESLEY FOSTER, BOULDER, COL.

### SWEET-CLOVER GROWTH.

The new growth of sweet clover is up in fine shape along ditch-banks and roadways. It looks favorable for a plenty of this plant for another season. The new growth is much more plentiful than the old growth.

### PAINT.

The paint wears off two or three times as rapidly on a cover as the rest of the hive, and now is a good time to paint the hives and covers if they need it. These days are right for a slow and hard drying of the paint, which makes it wear longer. The weather has been dry, as usual, in the fall, and the wood is in fine condition to take paint.

### COTTONWOOD PROPOLIS.

The propolis collected from the narrow-leaf cottonwood is red, and copious in quantity. It grows along the streams and in the mountain cañons, and the bees near the foot-hills and streams that have much of it along their banks daub up sections, supers, and hives with it. If there is any choice of location in a district I would keep out of the range of this tree if running for comb honey.

Removing the last supers from the hives has always been quite a difficult job. To get all the bees out without having them uncapped finished honey, and then to remove all the supers in the yard without causing robbing, has called for great care and speed in working. One method I tried, which worked well, was to go into the yard on a cool evening about dark, remove the supers, and lean them against the front of the hives so the bees could easily pass from the super to the hive. The night was cool enough so the bees in the super felt the need of seeking the hive, and it was not warm enough for them to carry any of the honey from the super to the hive. In the morning there were over one hundred supers free from bees. Only two supers contained any bees whatever, and these were quickly jolted out, and the whole load put on the wagon and hauled to the home honey-house without bees about. The supers were gathered up before sunrise, and there was no uncapping of honey at all. If the weather is right, not too warm, this is one of the best plans I know. A warm evening might encourage the bees to carry considerable honey to the hive.

### COVERS AND MOISTURE.

Now is a good time for a series of observations on the best covering for bees in the winter. Here in the arid country things do not get so very damp; but moisture often collects in the hive and over the frames. Colonies are all wintered on their summer

stands with but little if any extra covering, and this is usually sufficient.

I have uncovered colonies in the same yard, apparently of equal strength. One hive would have moisture around the edges, over the frames, while another would be perfectly dry. The covers seemed to fit alike—they were flat covers made of inch stuff, but a little opening under the edge will account for the difference. Ventilation at the top is necessary to the best condition of the brood-nest, I am sure. Warmth, upward ventilation, and evaporation are best secured with the use of an inside cover, a passage leading through this upward into the air-space under the cover. If the cover is not ventilated, the looser it fits the hive the better.

It is pleasant to know the bees are dry and warm, well placed, and a cluster of bees compact and snugly dormant. Bees fly so much during the fall, winter, and spring that a large amount of stores is used, and brood is quite plentiful in hives that are in well-sheltered places.

### MEAT AND HONEY.

I was never especially impressed with the combination of milk and honey, but good thick extracted honey of mild flavor spread over cold meat makes a morsel that is edible in the highest degree. It sweetens the meat without making one aware that it is honey that sweetens. Try it and see if I am wrong on the taste.

I spent the first week in October camping in the mountains at about 9000 feet elevation. The nights were cool, one, especially, being quite cold. Our appetites were keen, and every thing tasted away up in quality; but honey seemed to make us feel that we had a sweet of the wild outdoors. A spoonful brought a whole mountain-side of wildness and wild flowers to the mind.

Bees in the rocks and hollow trees are plentiful in the mountains, and miners and woodsmen often get some honey this way. The honey flora of the mountains is rather limited, and most of the bees die of starvation during the winter. This does not deter the swarms from the valley going to the mountains every good chance they get.

Swarms within a few miles of the foot-hills almost always strike for the mountains when they get away from the bee-keeper. They leave their best pasturage, the alfalfa-fields, and go toward the high wooded barriers that show against the sky. Do the bees smell the woods, pines, wild flowers, etc., or do they see the mountains several miles away? The foot-hills are so much in evidence that I can not but think the bees see them, though quite distant. Several have reported swarms going into the hills, staying several days, and coming back, apparently dissatisfied with the prospects of honey, starved out and cross, willing to take up the more prosaic work of calling upon alfalfa-fields instead of the more romantic work among the wild flowers on the rocky slopes.

## NOTES FROM CANADA

By R. F. HOLTERMANN.

### THE SEASON.

After reading all the discouraging reports as to the honey crop in the United States, I feel a little elated at having produced two carloads of honey this season. Let bee-keepers who have colonies with much honey-dew in the hives for winter stores be warned. Even yet, feed 10 to 15 lbs. of sugar syrup, or next spring such colonies may be found dead unless frequent cleansing flights are available.

### SLOW FEEDING.

G. M. Doolittle, page 561, I believe rightly condemns slow feeding in September. The queen may deposit eggs when the bees are fed rapidly, but the bees will destroy the eggs or brood when the "flow" ceases. Prolonged feeding tends to brood-rearing, activity, and excitement, and in my estimation it is a disadvantage to the colony.

### FEEDING THICK OR THIN SYRUP FOR WINTER.

Sept. 15th GLEANINGS has a good deal of timely advice about feeding for winter. Nov. 1 is not too late to feed bees packed for winter providing the right feeders are used and the syrup is thick. I now prefer late feeding to early, because the bees are less likely to begin brood-rearing, and because the sugar syrup is placed in the brood-chamber, covered by the bees; and the largest amount of it is utilized during the period when the bees are confined to the hive.

### TARTARIC ACID.

In my estimation tartaric acid is much safer than honey to put in sugar syrup. With the prevalence of foul brood it is unsafe to feed back honey. You will remember, Mr. Editor, that I sent you a small tin of nice white smooth-grained syrup in the early spring. It was granulated sugar syrup, two parts by weight of sugar and one of water brought to a boil and treated with tartaric acid, one teaspoonful to 13 lbs. of sugar. This substance granulated much like honey during winter. I showed it to several who mistook it at first sight for honey. Remember, it was not crystallized hard and solid, but like honey.

### WIRING FOUNDATION WHEN IT IS MADE.

On page 557 the editor brings up the question of milling the foundation 17 or 18 inches wide, and wiring it at the same time. I have made many tons of foundation, and believe that, with a much stronger and heavier roller, the difficulties in working the extra width could be overcome. As brood foundation is now made it must hang in the hive with the strain on the sheet in the direction from which it stretches and breaks most readily.

I would be willing to pay several cents a pound more for foundation milled the other way.

### ANNUAL MEETING OF THE ONTARIO BEE-KEEPERS' ASSOCIATION.

The above association will meet in Toronto, Ontario, York County Council Chambers, 57 Adelaide Street, East, Nov. 10, 11, and 12. The first session will be at 2 P.M., Nov. 10. The fruit, flower, and honey show will be held in Toronto at the same time, giving every one, as soon as he sets foot on Ontario soil, reduced railway rates to the convention. For fuller particulars address T. W. Hodgetts, Sec. Ontario Bee-keepers' Association, Department of Agriculture, Toronto, Ontario.

### CANADIAN NATIONAL EXHIBITION.

The apiarian exhibit at the Canadian National Exhibition was placed in the dairy building this year. The writer of these notes understands that the worthy president of the Dairymen's Association, Senator Dan Derbyshire, did some "kicking" about the arrangement. At first sight this combination might appear to be somewhat novel to a dairymen; but we read of a land flowing with milk and honey; and no land, even including Canada, can have, from a material standpoint, a better reputation than to be such a land. Many visitors, particularly those dwelling in the cities, do not go into the dairy building, because there is not much there to please the eye. The honey exhibit attracted them, and was a drawing card for the dairy department. The time may come when the program for lectures and demonstrations in dairying will, at certain hours, be set aside for demonstrations and lectures pertaining to the bee. I have been advocating this for some time. What crowds we shall then have! what an interest there will be in the honey-bee and its product! and what an enormous increase there would be in the demand for honey should this line of work be followed up! The Canadian climate makes honey a desirable food, particularly during the winter.

The quality of honey at the National Exhibition was not equal to that of last year, much to my surprise, and yet it was a credit to Canadian apiculture. The leading exhibitors were E. Grainger & Co., Geo. Laing, D. Anguish, J. T. Timbers, and G. E. Johnston. The exhibit of E. Grainger & Co., Toronto, took the first prize as being the most attractive. The prize was given by the Ontario Bee-keepers' Association. It occupied a space 12x20 feet. The total amount of honey in the display was 2000 lbs. The decorations were in yellow, white, and green. There were two ball pyramids, which were over 8 ft. high; and besides these there were eight others; also a grocer's window display. The exhibitors already referred to made attractive displays, and no doubt drew attention to honey, from which bee-keepers all over the country reap a benefit.

[In our next issue we will show a fine engraving of the first-prize exhibit.—D.]



## CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK.

### HOW TO MAKE THE BEE-PAPERS THE MOST VALUABLE TO THE APIARIST.

What do you do with your bee-papers after reading them? and how do you keep track of the many valuable things they contain?

In order that we may profit by what we read we must remember it at the time we wish to put it into practice, otherwise all our reading is of no value to us, as we might as well not read as to read and not remember what we read, or remember it when it is of no use to us. If all that was printed in our bee-papers were applicable to just the season of the year when it was before the readers, thus enabling us to test what we were reading by putting it in practice the next minute or hour, we should have little excuse for not remembering the valuable things we read. But this is impossible from the very nature of things.

With this preamble we are ready for the question our correspondent wishes us to answer, and in answering I will confine myself to the one paper, GLEANINGS, for what is applicable to one is applicable to all.

I have a leadpencil with me at all times, and consider it as necessary in my work as is a pocket-knife, which everybody is expected to carry. When GLEANINGS arrives I am eager to read it; and as I read I mark every thing which I consider worthy of reading a second time with two marks drawn on either side of the column. When I come to something which is new, and appears like an acquisition, or some old thing which impresses me of value because of some modification the writer has made, I enclose such in large pencil parentheses, thus: ( ). When the number has been read through I go over it again, this time reading only what I marked; and if, on the second reading, I think a certain article is not worth making a record of I rub out the marks made at first, till finally all the marks which are left are those which I consider of sufficient value to be recorded. In some instances the marks will embrace a whole article, while others call attention to only a few sentences. Some twenty years ago I procured a book of suitable size and arranged it similar to an assessor's book, with the alphabet from A to Z on the outside margin of the leaves; but instead of using the letters I wrote on the little square of the first, "Jan. 1," on the second, "Jan. 15," on the third, "Feb. 1," and so on, giving two leaves or four pages for each half-month to the end of the year. Now, when I sit down to reread the marked places in GLEANINGS I have this book by my side, and every place where I conclude those places marked before are worthy of laying up for the future, the parenthesis-marks are left, or others made where I had marked only for the second reading when first going over, and a record made in the book at the

proper place. Say, for instance, I found a superior way for grading honey in the Nov. 1st issue of GLEANINGS for 1904. My honey was all sent to market from Sept. 20 to Oct. 10, so this would be of no use to me till the next September, and by that time, in all probability, I should have forgotten all about it. So I now turn to the pages under "Sept. 1," and write on the first unoccupied line this: "GLEA., Nov. 1, 1904, page 1023. How best grade honey." When Sept. 1, 1905, arrives, I would hastily glance over all that was written under the place marked on the little square as Sept. 1, when, presto! I came across just what I wanted at that time, as I was now ready to commence grading and crating my honey for market. So I at once put the new plan into use; and if it proved better than what I had practiced before, a pencil-mark was drawn under the words "How best grade honey," which emphasized the matter in the book while putting it in practice, and thoroughly stamped the matter on my memory. If, on the contrary, after trying long enough to test it sufficiently, I found this new plan was not as good as the one I had always been using, the eraser was used, and the line left blank for the entry of something else valuable for Sept. 1 chronicling. After reading the second time, and jotting down in the book all which I think worthy of so doing, that number of GLEANINGS is carefully laid away in a place set apart for each number as they come (and the other bee-papers I take are treated in the same way), so that at the end of the year they are in perfect order, when the volume is "pigeon-holed" in its place with other volumes, or bound in some way, if I think it better to bind them. Then on long winter evenings I can sit down in future years, or at any time I may wish to refresh my memory on the many good things GLEANINGS as a whole contains, and, by the help of this book, get the whole *cream* of all the volumes so far published, as I have them all nicely filed away, and this book tells me where all the cream is to be found without further "skimming."

Different persons would doubtless make different selections; and if I were located in California I would make different selections myself; but this need not detract from this plan of helping the memory, and bringing things of value to our notice at just the time they are applicable for our use.

### THE WONDERBERRY IN NEBRASKA.

This part of Nebraska is overrun with them. We have a variety of soils, and on each soil we have a different-looking and different-sized berry, but all the same berry if grown on just the same soil and under the same conditions. Some people think them splendid, while others do not eat them at all. Mr. Daniel (see page 588), ought to locate here, then he would not have the trouble of cultivating the fruit, for he could gather it by the bushel, and the people would be glad to have him haul it away. The berries grown from the twenty-cent seeds are just the same as those in our gardens, and moist places are covered with the plants.

W. H. MULLS.

Arden, Neb., Sept. 20.



# GENERAL CORRESPONDENCE

## HIVES.

### Size, Shape, and Methods of Manipulation the All-important Factors in Choosing a Hive.

BY J. E. HAND.

It must be evident to the careful readers of the bee-journals of this country that the tendency of the times is unmistakably toward a larger brood-chamber than was afforded by the eight-frame Langstroth hive of a few years ago. It should be equally evident to those who will take the time to digest what they read that the question is no longer large vs. small hives. Up-to-date bee-keepers have known for several years that the shape of a hive and its methods of manipulation are of equal importance with the size of it, and they are profiting by this knowledge by having perfect control of their bees at all times, while those who formerly advocated brood-chambers that are wider than they are deep are still laboring under the delusion that the size of a hive is of more importance than its shape, and their bees continue to fill up their mammoth brood-chambers with honey that the up-to-date bee-keeper is getting in his sections, and are casting swarms in spite of their claims of non-swarming hives.

The object of this article is to tell the readers of this journal that the eight-frame Langstroth hive, when properly manipulated, possesses every advantage claimed by the advocate of the twelve-frame hive, in a much higher degree of perfection, and, besides, many other advantages of a highly desirable character that can not be attained with a twelve-frame hive on account of its size, shape, and methods of manipulating, since bees can be controlled only through their instincts.

Progressive bee-keepers have known for a quarter of a century that perfect control of bees is out of the question with a brood-chamber the capacity of which exceeds the fertility of the average queen.

First in array comes the advocate of the ten-frame hive, who, evidently realizing that the word "location" is often used to cover a multitude of extravagant theories, is willing to compromise by trying to fit the man to the hive, the hive to the man, and both to the location. Now, these men are wise in their day and generation; therefore, realizing the difficulty of fitting a man to a pair of boots two sizes too large, they are like the Irishman, who, on being reprimanded by his wife for paying an exorbitant price for a very small pig, replied, "Be aisy, Biddy, he'll grow to it in time." So these wise ones propose to take the beginner and let him grow up to the twelve-frame hive by degrees, beginning with the eight-frame hive, which he will soon outgrow, and must discard for a

ten-frame which it will, in turn, soon be necessary to discard for a twelve-frame hive, when he may be considered a full-fledged bee-keeper.

Next in order comes the twelve-frame-hive man; and, whatever his other failings may be, we must accord to him the credit of standing by his honest convictions. He tells us that the eight and ten frame hives are both entirely too small, and that the tendency of the times is toward a large brood-chamber having a capacity equal to twelve Langstroth frames. His argument is quite convincing to those who think the instincts of bees are not worth considering. Here it is: Large-brood-chamber hives like the Dadant, being of a sufficient size to accommodate the fertility of the best queens, will contain more bees than the smaller eight and ten frame hive, and will, therefore, give a larger yield of surplus honey; and, being so large, they are less inclined to swarm, and will produce a paying crop of honey with very little manipulation. Even our staid old friend Dr. Miller has been sorely tempted by the eloquence of the large-hive advocates. I am perfectly willing to concede that the twelve-frame hive is none too large during the breeding season; but further than that I can't go.

It shall be my aim in this article to fit the boot to the foot; in other words, the hive to the man, and also to explode the groundless theory that there is no best hive for all locations.

When bee-keepers learn that bees can be controlled only through their instincts, and that instincts of bees are not materially changed by location, they will be in position to understand that a hive and system that gives us perfect control of our bees in one location will be likely to do it in another. From this point of view it is easy to see that there may be such a thing as a best hive for all locations. While I do not claim perfect swarm control for the eight-frame hive, yet this hive, when properly manipulated, will approach this high ideal more closely than either the ten or twelve frame hive.

Birmingham, Ohio.

*To be continued.*

## NECTAR FROM RED CLOVER.

### Theories of How Bees Are Able to Get it; Passageways Through the Combs During the Winter.

BY ADRIAN GETAZ.

GLEANINGS is at hand with many interesting items to which I desire to add my mite of information.

In regard to bees gathering nectar on red clover, several opinions have been advanced. Generally it is supposed that, owing to drier weather, the second crop has blossoms with shorter corollas, and that the bees can reach the nectar on that account. Another theory is that, in wet weather, or, rather, when the ground is sufficiently wet, the nectar is more abundant, and fills up the corol-

las better, and thus comes within reach of the bees.

A German apiarist a few years ago undertook to settle the question and spent a part of the summer lying down in the clover-fields to see how it was. He reported that very few insects take the nectar through the corollas; but some kinds cut a hole near the bottom and help themselves through it. The hole once made, a number of other insects, including bees, take advantage of it; and if the bees do not work on the first crop it is because at that time there are only a few hole-boring insects present.

The tongue-reach secured at Medina is certainly very encouraging to those who would experiment in that direction. An increase of one-third or over in a comparatively short time, and under such disadvantageous circumstances, is worth noting.

The difficulty in mating could be minimized considerably. In trying to maintain a race of yellow bees among others, any mis-mating can be detected by the marks of the workers; but when the bees are all of the same color it is impossible.

However, I think the trouble would be largely overcome by establishing an apiary in an isolated locality, inducing the long-tongued queens to raise a large number of drones, and suppressing those from the other colonies.

DOOLITTLE'S FIRST QUESTION, OR, RATHER, HIS ANSWER; THE RELATIVE NUMBER OF FRAME AND BOX HIVES IN EUROPE.

In Europe the number of box hives and skeps exceeds considerably that of the frame hives. Those box-hive men used to sulphur the bees of the hives they wanted to "take up." Now they drive them and sell them to the frame-hive men. It has occasionally been reported that a colony thus made had wintered without combs or foundation by simply putting a sufficiently large cake of candy over the frames. This, by the way, is a splendid method of feeding in any case.

WINTER PASSAGEWAYS; HOW THEIR NECESSITY DEPENDS UPON CLIMATE AND CONDITIONS.

Concerning the value of passageways through the combs during the winter, I will say that this is merely a question of locality, or, rather, of the method of wintering. In the cellar the temperature varies but little, and there is no inducement for the bees to leave the cluster and get scattered; and if they do, the temperature is high enough to enable them to regain the cluster by passing over or under the frames.

Under this latitude the case is altogether different. We winter out of doors. Our winters consist of an alternation of a few warm days followed by rain or snow and a cold wave. During the warm days the bees expand the cluster considerably, fly out freely, and scatter more or less throughout the hive; and when the cold wave comes the temperature falls very rapidly, and they huddle together between the combs where they happened to be. Last winter we had quite a spell of warm weather for eight or ten days.

The temperature was between 70 and 74° maximum every day. One Friday, near night, the rain came and soon turned into snow. Saturday night the weather began to clear, and Sunday morning showed 23° in the city and about 19 in the open country around. The smoke and numerous fires in the city make about 5° difference. That is a fall of over 50° in a little more than 36 hours. The greatest variations occur usually in February, and I have seen the thermometer fall at the rate of 10° per hour.

The celebrated Italian apiculturist, Dr. Dubini, was in the habit of making three small holes through the combs instead of one large one. To prevent the bees from plugging them, he always put a small tin tube in each one.

Knoxville, Tenn.

## BEE-KEEPING IN THE PECOS VALLEY, NEW MEXICO.

A Wonderful Fruit Country, but Not much Better for Bees than Wisconsin.

BY HARRY LATHROP\*.

A northern bee-keeper would naturally expect a much warmer climate in New Mexico than in his own section, and it is warmer in a way. The winter weather here seems like summer to a Wisconsin man. Bees are universally wintered on their summer stands without extra protection, and the winters are very short and mild. Notwithstanding all this, the one thing that seems to be the hardest to contend with is cold. It must be remembered that an altitude of about 3500 feet insures cool nights the year round. The great difficulty is to get the colonies up to a good working strength in time for the opening of the alfalfa flow, about May 15. Early in the spring there usually occurs quite warm weather; brood-rearing progresses nicely, but a period of cool weather ensues and the colonies dwindle badly. This is a discouraging feature. We meet it in the North, but only occasionally as bad as it is here. In Southern Wisconsin, summer weather generally comes to stay when it does come, and our colonies will be populous, and often make preparations for swarming in April.

A short warm day and cool nights which cause the clusters to contract is the rule here in the spring, and to some extent all the time.

It is the continuous honey-flow of about 90 days that enables the careful bee-keeper here to harvest an average of 100 lbs of extracted honey per colony, one year with another. That is no better than we can do in Wisconsin in good seasons, but better than we can average. This being an irrigated district

\*This is the second time I have visited the Pecos Valley of New Mexico. After my first visit I did not write a word for publication regarding bee-keeping, for my information was too meager and fragmentary. Now that I am here, and have interviewed at length several of the most extensive honey-producers, I feel that I understand more clearly the advantages as well as the drawbacks connected with bee-keeping in this valley.

HARRY LATHROP.

Greenfield, N. M., Jan. 19.



they do not have crop failures as with us. Alfalfa and sweet clover are the principal honey-plants. There are wild flowers which undoubtedly contribute a share of the crop, and I think cause the honey to be darker than it would be if alfalfa and sweet clover were the entire source.

The bee-keepers do not seem to think that the thousands of acres of apple bloom is of much benefit to the bees. The weather is too cool for good work, and then there is the danger of losing many bees from poison, as some orchardists will spray while the bloom is on. The colonies have to build up on the first part of the alfalfa bloom, which involves a loss of at least a whole month.

Price conditions seem to be identical with ours, except that jobbers in Denver offer better prices than our buyers offer us in the East.

There seems to be little or no trouble from swarming, but a great deal of trouble in keeping the stocks supplied with queens, and strong enough to do good work.

The field in and near Roswell is well stocked, and there are apiaries all along the valley; but as new lands are constantly coming into alfalfa there is and will be room for expansion.

The honey produced is "the finest in the world," as usual, so you are informed by local authority. It is alfalfa of good body, but for my part I can not see how it compares, either in color or flavor, with our white-clover product.

I can see no advantage in this country over Wisconsin for bee-keeping, except in one point. The Pecos Valley bee-keepers are sure of a crop every year, and we are not. The careless bee-keeper would do very little here, because his colonies would dwindle and become queenless from lack of attention.

Just to mention other things, there are great possibilities—alfalfa, fruit (especially apples), truck-gardening, and poultry all yield splendid returns. The land is level and very productive as soon as the irrigation water is applied. There is no doubt that a family can make a good sure living on five or ten acres of land, and in the future small holdings will be the rule. I feel that I should like to live here and keep bees; but I would surely have an orchard coming on, a nice flock of poultry, and some garden. For 60 miles in length and 10 miles in width this valley will be like a beautiful garden. Great fields of alfalfa and immense apple orchards on every hand produce a scene of wonderful beauty. The fruit produced is large, well colored, and of excellent quality. In the future it will command fancy prices and an eager market.

Lands, improved or unimproved, can be obtained now at prices very low as compared with other fruit and alfalfa districts in the West. It is, in fact, a veritable paradise for the fruit-grower and farmer; but for bee-keeping alone, from what I am able to gather, give me old Wisconsin.

Small game is plentiful here; and if I had more space I should like to tell you about

the jack rabbits, cotton-tail rabbits, wild ducks, geese, and swans, as well as many kinds of smaller birds that winter here. The little cotton-tail is as fine eating as spring chicken, and a great many are used. The jack rabbit does not seem to be in great favor, though some eat them before they are quite full grown. It is some fun to hunt them, but they are not easy to bring down.

Greenfield, New Mexico.

[Mr. Lathrop is an old correspondent, and we do not believe he has any ax to grind in telling of the good features of the Pecos Valley; but we may say that we have known some who have gone to some of these new sections of New Mexico who have since come back east sadder and wiser men. They found the country delightful, the climate superb, and the soil productive. Luscious fruit grew there by the ton, but there was no market when they got it. When they went into the locality in the first place the crops would be sold at good prices without difficulty. But the onrush of the settlers so increased the output that the only market available soon became congested. The same thing may take place in the Pecos Valley. It should be remembered that New Mexico is distant from the large centers of population because the only means of transportation is railroads, and they appear to be willing to charge "all the traffic will bear." That means that the cost of *delivering* the produce is often more than it is worth.—ED.]

## BAGS FOR CANDIED HONEY.

### How to Retain the Aroma and Protect the Honey from the Moisture of the Atmosphere.

BY JOSEPH GRAY.

When we consider the care and industry of the honey-bee in securing the perfect sealing of its treasure, it teaches the apiarist that he can not expose this selfsame treasure to all the modes of the atmosphere without loss.

Honey is liable to attract moisture from the atmosphere, and so set up fermentation, or yield up its delicate aroma to the atmosphere; hence the need of some protection when producing a nice roll of honey for the breakfast-table. Our rolls, when granulated solid, have an attraction all their own, and never fail to please the eye as well as the palate of visitors to our home. Imagine a half-pound roll  $4\frac{1}{2}$  inches long by  $1\frac{3}{4}$  wide, peeled of its covering, with a bloom equal to a peach, placed in a nice glass dish. This bloom is obtained by the peeling of the bag, and I know no other process by which it can be obtained—the honey must be granulated solid. Peel from you, so that the peel will be continuous.

The humidity of our atmosphere made it impossible for me to put up honey in Aikin bags. I soon found I must exclude the air; and after trying various ways I at last succeeded by using the ordinary grocers' bis-



cuit-tins, 9×8½, and 10 inches deep, with a plain lid. These tins prove a handy receptacle, easy to use, excluding the air so that the atmospheric changes have no influence on the honey, thus retaining the aroma until the honey has solidified.

Honey put up by this method becomes a most attractive article for the breakfast-table for those who do not care for liquid honey. Neither wood nor cardboard will resist the atmosphere the same as tin, hence the reason for its use in the biscuit trade. By the use of a shelf, 50 of these small rolls can be placed in one tin.

To facilitate the opening of so small a bag ready for filling, we place them in a warm temperature, and use a cardboard cylinder to open and shape the bag. This allows the air to drive out through the center.

Long Eaton, England.

### BEE-KEEPING IN OKLAHOMA.

#### The Conditions in the Central Portion Ideal for Outdoor Wintering in Single-walled Hives.

BY W. F. ROLLER.

Mr. G. E. Lemon's statement that bees do not winter well in Oklahoma, p. 39, Jan. 1, is not in accord with my experience, nor with that of bee-keepers generally, I believe, in this portion of the State, which is just south of the center. The difficulty here is not in wintering, but in carrying the colonies safely through the cool spring months. Conditions here are ideal for outdoor wintering. The hives are seldom moved from their summer stands, and double-walled hives and packing are not necessary. The severe cold spells of weather seldom last longer than two or three days. In nearly every week there are one or more days warm enough for the bees to take a good flight. These frequent flights enable them to stay contentedly in the hives, flying out only on days warm enough for them to get back without danger of getting chilled and lost.

The critical period with us is the spring season, from early in March to about the middle of May. During the larger portion of this time the weather is cool, the winds are high, and though the flowers furnish only a small amount of nectar the bees seem unable to get what little there is. Brood-rearing continues throughout this period, and unless there is an abundance of winter stores left over or ample feeding resorted to, many colonies dwindle down to a mere nucleus or die from actual starvation.

The summers are long and usually favorable for the gathering of nectar. With three or four successive crops of alfalfa and many other nectar-bearing flowers, there is more or less of a light, continuous honey-flow from May to October. Foul brood and other bee diseases are almost unknown here.

In Cleveland County there are a number of bee-keepers who have apiaries numbering from five to one hundred colonies each,

and they all regard the business as profitable, yielding an ample return for the time, labor, and money expended. At the Oklahoma State fair held in Oklahoma City last October were exhibits of bees and honey well worthy of the efforts of some of the older States.

Norman, Okla.

### JUSTICE TO OKLAHOMA.

#### A Continuous Flow from Alfalfa.

BY GEO. H. COULSON.

The article entitled "Conditions in Oklahoma" hardly does justice to our young growing State. I will admit that there was a time when but little else than short buffalo grass, seasoned with high winds, prevailed, and it was then that the cattlemen and the Indian had undisputed sway; but a great change has been wrought, not only in Oklahoma but in Southern Kansas as well. It was 27 years ago this winter, when I owned a nice little apiary of 75 colonies in Northeastern Ohio, that I contracted the western fever, and sold my farm, bees, and fixtures, except two of my best Italian colonies in Simplicity hives. I swung them to the ceiling of a car filled with furniture and a little stock, and landed in the county in Kansas named by Mr. Lemon in the article I referred to above. Alfalfa was then unknown in that region. My bees seemed to be lost from the start. I kept feeding them to keep them alive, and the following spring one colony cast the largest swarm I ever saw from one hive. It was their death-knell exertion. My queen, being an extra prolific one, and combs being empty, she filled them with eggs while I kept feeding from above in sufficient quantity to raise the brood. I was so determined to succeed that I fed as regularly as I did my cattle and horses, using rye flour for pollen. I soon decided that my pocketbook would not admit of this, so quit feeding, and they soon dwindled away. But since that day God has especially blessed that country as well as Oklahoma. I now live in Oklahoma in the county adjoining where Mr. Lemon lives; and had he visited our State fair this fall he would have seen a display of honey and bees that but few of the older States could excel.

The county in which I live is especially favored as a location for bees. Alfalfa being one of the leading crops, in the division of the State into counties it was named Alfalfa by reason of the large amount of that crop raised. There are two large mills in this city that grind the alfalfa hay into meal and ship it all over the United States, much of it going to the dairying localities in the New England States. A good market is thus created for the hay, and therefore but little pasturing is done. Much seed is raised; and as four full crops of blooming alfalfa are cut during the season a continued flow of nectar is assured, while white clover and other bee pasture are rapidly coming in. From two

colonies of Italian bees the past season, by raising my own queens and adopting modern methods of increasing, I now have eleven colonies in good condition. While our flow of nectar is not so abundant at any one time as in some localities, it seems to extend over a long period of time. Our first frost last season was Oct. 24, and the flow from alfalfa and other fall flowers seemed to continue up until that time.

Our winters are mild and open, there being scarcely a week when the bees do not fly out. Their last flight was Sunday, Jan. 9, when they were out in full force, as though it were spring.

The field here is as yet almost entirely unoccupied, and I am sure that a great amount of nectar is going to waste for want of bees to gather it.

Cherokee, Okla.

### DISEASES OF MATURE BEES.

**A New Animal Parasite Discovered by Dr. Enoch Zander, which Lives in the Middle Intestine, and Causes Incurable Diarrhea.**

BY DR. C. C. MILLER.

At the big German convention lately held at Weissenfels, a notable number on the program was Dr. Enoch Zander's "Animal Parasites as Disease-producers in Bees," which is reported in full in September *Bienen-Vater*.

Heretofore there has been no word of any microscopic enemy taking up its abode in the body of a bee except those belonging to the vegetable kingdom, such as the bacilli of foul brood. Dr. Zander has been quietly carrying on investigations for the past two years—investigations not yet completed—through which he has determined that an unknown foe has been making devastations among the bees—devastations worse than those produced by any other cause—worse even than anything in the line of foul brood, and that this microscopic foe belongs to the animal kingdom.

To this new acquaintance Dr. Zander has given the name *Nosema apis*. It is a one-celled, egg-shaped affair, light-refracting, about  $\frac{1}{1000}$  inch in length, and  $\frac{1}{125000}$  in diameter. That's in the spore form. It is found only in the middle bowel of the bee. If one of these spores succeeds into the middle intestine of a healthy bee, the shell bursts, and there emerges a tiny, longish parasite, which immediately bores its way into the wall of the intestine, grows and increases in a wonderful manner, and in four days after its entrance again forms spores. After a number of generations the cells of the wall of the intestine become so filled with these spores that the structure of the intestine is no longer recognized, but it appears to be made up entirely of the spores of *Nosema apis*. A striking result of the nosema spores getting the upper hand is the coloring of the middle bowel. While in a healthy bee it is trans-

parent and reddish, it becomes, after infection, opaque and entirely milk-white. This white color is a sure sign by which one can recognize the disease, even without the aid of a microscope.

The parts of the intestine crammed with these spores gradually die and are emptied with the evacuations. Through this comes the possibility of infection of healthy bees, for there is always the possibility that some of these evacuations may come in contact with the food of the bees. The infected bees are hopelessly doomed. They plunge out of the hive, fall to the ground unable to rise again, and after a longer or shorter time die. According to the degree of the infection, the bees die off gradually or rapidly, in some cases the dead bees being piled in front of the entrance two or three inches deep. Many of these latter colonies are entirely exterminated in spite of being queenright and well supplied with stores.

It must be mentioned, however, that queenlessness is apt to result from the disease. Unlike foul brood, this is a disease of the mature bee and not of the brood, and the queen may be infected as well as a worker, so that in some cases where a colony was supposed to disappear through queenlessness it was really the disease that destroyed the colony, queenlessness being merely one of the results of the disease.

In bees from colonies that have died with diarrhea, almost always masses of these spores will be found. In 22 out of 25 cases observed last spring, Dr. Zander found not a single bee without the parasites. He recognizes two kinds of diarrhea—the mild kind, which is not really a disease, but merely a distention of the intestines; the other the virulent type, caused by the presence of *Nosema apis*, and a sure-enough disease.

While the mild type may be avoided in many cases by replacing objectionable honey with sugar syrup, the infectious type—the nosema disease—may prevail where sugar syrup is the only food; and a colony, after apparently wintering well, may become rapidly depleted in spring, even to entire extermination. The failure to retain the feces is not a constant symptom, as in the mild form of diarrhea but incidental, although frequent. Bee-keepers have recognized "dry diarrhea," which they dread worse than the wet. But the milk-white middle bowel shows that the nosema has got in its work.

The disease is highly infectious, and once having got a foothold in an apiary it is hard to rout it. The soiled combs, especially while the dejections are liquid, readily convey the disease if they are moved from one hive to another. When the bees take their cleansing flight, the surrounding neighborhood is fouled, and healthy colonies may become infected through drinking-places or otherwise. Robbers may carry the disease.

In some cases, circumstances favoring, the diseased colony recovers provided the queen has not been affected.

The May sickness of Germany is that our



spring dwindling?) is due, Dr. Zander thinks, to *Nosema apis*. He is not sure that it ever appears later than June.

There can be no cure unless the bees can be furnished with a new set of intestines, and in considering preventive measures two things are to be kept in mind. First, a colony not severely affected may recover provided the queen remains healthy and forage is plentiful; second, that the soiled combs are the chief means of infection.

A colony severely affected should be put in a clean hive, as much as possible on foundation, and remaining combs of brood placed where they can easily be removed. Then the colony should be kept warm and be well fed. As soon as convenient, requeen, since there is danger that the queen may be affected so as to succumb the following winter.

Infected hives must be thoroughly cleansed with hot soda water, and the safest thing is to melt up the old combs and give the bees opportunity to build new.

The probability is that many a bee-keeper will think this article has no interest for him, if, indeed, he takes the trouble to read it through; the wise bee-keeper will be glad to be forewarned and to inform himself in advance. *Nosema apis* may at any time become an unwelcome resident here. Are we sure it is not here now?

Marengo, Ill.

## ANIMAL PARASITES AS A CAUSE OF BEE-DISEASES.

### Dr. Zander Discovers a Cause for a Disease of Mature Bees.

BY ALOIS ALFONSUS, EDITOR OF BIENEN-VATER.

Translated by F. Greiner, Naples, N. Y.

The 54th Wanderversammlung (convention) of the German, Austrian, and Hungarian bee-keepers was held in Weissenfels, Saxony, Aug. 9, 1909. On this occasion, Dr. Zander, assistant at the royal Bavarian institute of apiculture in Erlangen, delivered a most noteworthy address on the above subject, which attracted a great deal of attention, being destined to shed some light on the dark and somewhat unexplored chapter of bee diseases.

The causes of certain bee diseases have so far not been fully explained; for example, dysentery, also spring-dwindling (called "May disease" by the Germans). Dr. Zander discovered in 1907 large quantities of miniature egg-shaped structures in the middle portion of the intestines of honey-bees

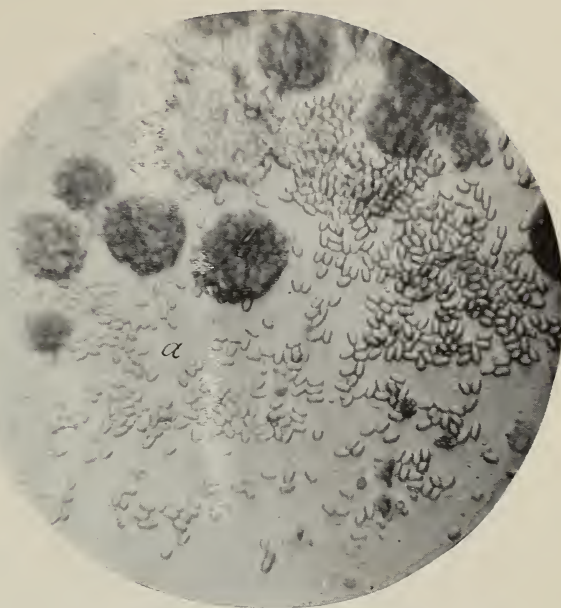


FIG. 1.—THE INTESTINAL WALL OF A DISEASED BEE, MAGNIFIED ABOUT 500 TIMES.

a, the one-celled spores of *Nosema apis*; b, the closely bunched spores almost obliterating the intestinal wall.

having died in the springtime. His supposition of having to deal with the spores of an animal parasite came true. Examination revealed that it was a mono-cellular animal belonging to the family of the Mikrosporidien, species *Nosema*. By the way, we have another species of the Mikrosporidien which kills so many silkworms.

The *Nosema apis*, Zander, is a mono-cellular parasite which lives in the middle portion of the bee's intestine, devouring and destroying the tissues of it. It can not exist outside. When the available food supply is exhausted, spore formation takes place. The spores envelope themselves into shells which protect them, and thus they may remain dormant, ready to begin life again as do foul-brood spores.

The micro-photos which Dr. Zander had the kindness to place in my hands, and which accompany this article, plainly show the spores as miniature structures. They have a length of  $\frac{1}{200}$  millimeter and a width of  $\frac{1}{500}$  millimeter. Some of the spores are found singly; in other places they occur in regular heaps—see Figs. 1 and 2.

If a spore finds its way into a bee's intestine its shell bursts and the little animal parasite comes forth. It fastens itself to the wall of the intestine, living thereon, multiplying with astonishing rapidity, entirely consuming and destroying said wall. After four days its work is accomplished, and it enters again into the spore state. According to Dr. Zander, numerous nosema generations follow another, and the intestines seem completely filled with spores, with the result



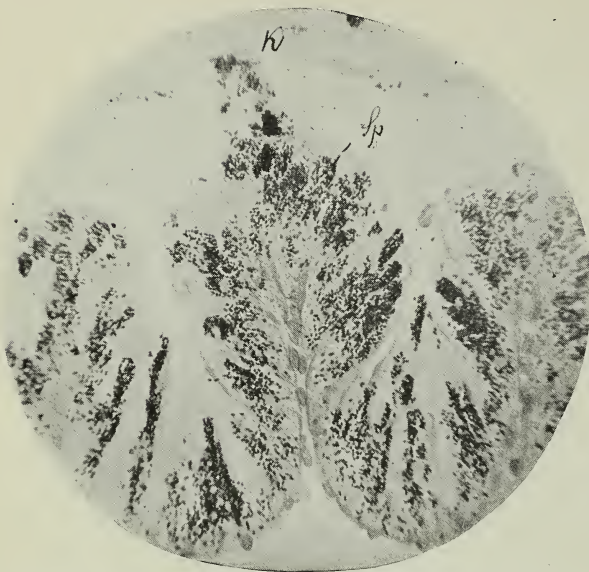


FIG. 2.—A LENGTHWISE SECTIONAL VIEW OF THE MIDDLE INTESTINE OF A DISEASED BEE MAGNIFIED ABOUT 300 TIMES.

Sp., nosema spores in the intestinal cells; K, portion of intestine destroyed by the disease, which will be carried out with the excrement.

that almost nothing of the intestinal structure is left—see Fig. 2.

As the disease develops in the bee there appears a discoloration of the affected membrane. A healthy bee's intestine is semi-transparent and flesh-colored; that of an affected or diseased bee becomes and remains milky white and opaque. The discoloration or change is a sure sign of the disease, and may be observed without the assistance of the microscope.

The voidings of such diseased bees contain countless numbers of nosema spores; and when these become mixed with the food or the drinking-water of bees, infection is at once secured. There is no help for an infected bee—it must die. Of 25 cases of dysentery, Dr. Zander found 22 as the result of nosema infection. No bee examined was found without some parasites.

Dr. Zander admits that dysentery may result from other causes, such as disturbance, poor food, etc., but claims that these cases are rather the exception. That kind of the disease he names as the harmless dysentery. The voidings in that case are of a coarse granular nature, and possess an acid or sour odor. Mixed and ground together with water they form a yellowish paste which contains practically only pollen. This kind of dysentery disappears as soon as the inciting causes are removed or conditions change.

The malignant and contagious dysentery produced by *Nosema apis* is easily transferred to other bees; for instance, by voidings of diseased bees dropping into the drinking-water of other bees, or coming in contact with their food, befouling the combs; also

by uniting diseased with healthy colonies. With the microscope the presence of nosema spores is easily proven.

The May disease, *alias* spring dwindling, is another form of the nosema disease. During the summer, quantities of bees die from infection with *Nosema apis*. In May and June many thousands fall a prey to the deadly parasite.

As most conclusive must we view Dr. Zander's infection experiments. Bees that died with the disease, and their excrements, were ground together with diluted honey. The strained product was then given to a normal colony in two artificially filled combs. The bees appropriated the mixture at once, and after three days they began dying in large numbers. The microscope proved the infection. After a rainy day the dying appeared most pronounced.

Infected and confined colonies showed the disease and befouled hive and combs on the fifth day. The bodies of the dead bees showed swollen abdomens. The excrements of the bees were watery and dirty yellow. Even the queens are affected by the nosema disease, and die. This explains why colonies afflicted with this dysentery usually become queenless. A cure of diseased bees is altogether out of the question; but we may succeed in preventing the infection of other colonies by disposing of diseased hives, combs, etc. The renewal of the comb is an admirable means of preventing the spread of the disease, and is to be recommended. Old combs are a great source of danger.

The honey of diseased colonies should by no means be given to other hives.

As Dr. Zander, as shown in the above, has discovered and made known to the public the nature of the two diseases, dysentery and spring dwindling, we undoubtedly shall, ere long, find ways and means to stay them. The bee-keepers of the world are certainly greatly indebted to Dr. Zander for his untiring efforts in behalf of the bee-keeping pursuit.

Vienna, Austria, Aug. 25, 1909.

#### A NEW CAPPING-MELTER.

BY J. W. GEORGE.

I am sending a drawing of my capping-melter, the first one of which I made in April, 1906. I have been using them and improving them every season since, and have melted the cappings from more than a ton of

honey a day, getting from that amount about 20 lbs. of wax. I have been making these different melters all on the same principle. The last one works perfectly.

The construction is shown in the drawing. There is, first, a galvanized-iron pan, 2 inches deep, with a corrugated bottom, the corrugations running cross-wise. This is 28 inches long and 18 inches wide, and tapers down to 6 inches at the end where the honey and wax flow out. At one corner, as shown, the construction permits of heating the knives in the water of the tank below.

The tank holding the water is one inch deep at one end and  $\frac{1}{2}$  inch at the other end. This makes a very small amount of water to heat. Under the water-tank is soldered a false bottom, forming the hot-air oven, which confines practically all of the radiating heat from the gasoline-burner. This false bottom is shown on a small scale under the main drawing. The large hole in the center allows the heat to spread over the entire bottom of the water-tank. The air-space is about  $\frac{3}{4}$  inch, and there are braces to hold the water-tank from sagging down on to the false bottom.

I find that one burner of a gasoline-stove, turned as low as it will run, is sufficient to take care of all the cappings which one can remove in a day. I let the honey and wax run off together, and after the wax hardens I remove it. Later I put it through a press and separate what little slungum it contains.

The water can be brought to a boil in about twenty minutes. The only opening to the water-tank is at the right-hand corner, where the 4x4-inch space is left for the knives.

Imperial, Cal.

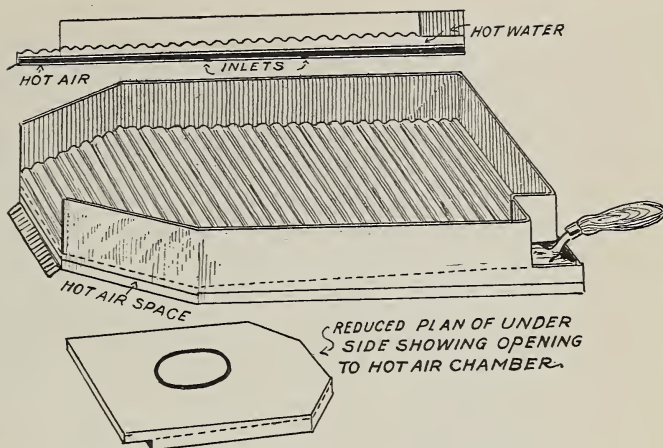
### FORMING BABY NUCLEI.

**How the Trick is Accomplished at the North Yard; Some Other Tricks of the Trade in Queen-rearing.**

BY E. R. ROOT.

In our last issue we promised to give some particulars of how Mr. Pritchard, of the north yard, was enabled to rear nearly three thousand queens with the help of a boy. Some little time ago our staff artist went down to this yard to take pictures showing the various steps in the operation. These we take pleasure in presenting at this time.

The man in charge has approximately, in the spring, between 70 and 80 full colonies in double-walled chaff hives. In the latter part of May or the first of June he begins grafting cells in wooden cell cups. These



are given to strong colonies brought to a swarming-pitch artificially. This part we will explain at a later time. When the cells are nearly ready to hatch he starts forming nuclei in the twin mating-boxes, having frames  $5\frac{1}{2}$ x8 inches in size; that is to say, three of these will just fit inside of a Langstroth frame with a thick top-bar.

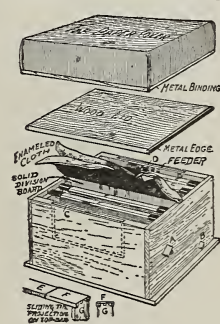


FIG. 1.

fill them with honey and brood.

### FORMING THE NUCLEI.

We take a regular eight-frame hive-body that has a wire-cloth screen bottom and a removable wire-cloth screen top. We then go to some one of the other yards and shake into this box some ten or twelve pounds of bees. These may come from four or five colonies, but generally from a dozen or more hives, so that we do not pull too heavily upon a few. This box of bees is then taken to the north yard, where the nuclei are to be formed. Four of the twin baby hives are first placed upon a little light stand, each filled with empty combs ready to receive the bees, entrances closed, and ventilators open. The hive-body containing the shaken bees is then placed conveniently near. They are wet down by a spray, then given a jar so as to get the bees down in a mass in the bottom. With a little tin dipper we scoop up approximately four ounces of bees, making anywhere from a thousand to twelve hundred individuals. As the bees have been





FIG. 2.—SCOOPING BEES WITH A SMALL DIPPER INTO BABY NUCLEI.

previously wet down they can not fly very readily, and can therefore be scooped up *a la* Pratt and dumped in one of the compartments as shown in Fig. 2. An attendant stands ready with a number of virgin queens. He removes one of the frames of one compartment, and, while Mr. Pritchard is scooping up a little dipperful of bees and dumping them in the space made vacant by the removal of the frame, he drops in a virgin queen that had previously been dipped in honey or syrup. He now puts in the removed frame and folds back the enamel cloth. The operation is repeated in the other compartment of the box, and so on the process is continued until all of the twin mating-boxes are filled with bees and virgin queens. The baby hives are then set to one side for about 48 hours, when they are placed on their permanent stands for the summer. Their entrances are opened at night. The next morning, as the bees come out they will mark their location and begin housekeeping with their baby queen.

After the baby nuclei are in full operation Mr. Pritchard prefers to give ripe queen-cells, as shown in Fig. 3, in place of virgins given at first. The two frames are spread a little apart when the cell is placed in position and secured.

It should have been stated that, at the

time of forming these baby nuclei, a thick syrup of about  $2\frac{1}{2}$  parts of sugar to one of water is poured into the feeder compartment at one side. At other times, if it is a little cool it is given at night hot, when it will all be taken up before morning. This feeding may be required off and on during the season. In some years the baby nuclei will gather enough to supply their own needs. At other times they require a little help.

Mr. Pritchard prefers to give these nuclei ripe queen-cells rather than virgins just hatched. Our Mr. Bain, at our home yard, keeps his cells in a large hive, hatches them out, and lets the virgins run into the boxes. Mr. Pritchard thinks that, for him at least, there is too large a loss in introducing virgins and too much time taken to get them into the hive. When a cell is given, he says, the young mother-to-be hatches out and is always kindly received.

These little twin nuclei serve only the purpose of mating. No cells are reared in them, and the comparatively small number of bees in each compartment makes it easy to find a laying queen or a virgin if present. If in doubt as to whether the nucleus has a virgin, another cell is given; and even should the virgin come back from her flight she will take care of that cell by gnawing a hole in its side and killing its occupant. Should she



be lost in one of those flights the cell will provide another virgin, which will come on in due course of time. It is better to have a surplus of cells than to lose time.

At our north yard we had 170 of these twin mating-boxes, making in all 340 baby nuclei in operation. On the average, a laying queen could be taken from one of the compartments every 9 days. When queen-rearing operations were at their height, Mr. Pritchard and his boy helper could take out from these 340 nuclei from 40 to 50 laying queens a day. Sometimes they would take out 60, and another day they would not take more than 15, making the average nearly 30 queens per day for the entire season.

In a small way, we would not advise any one to rear queens from these babies; but a large honey-producer can use them to very good advantage. A one or two frame nucleus of standard Langstroth dimensions is a bad proportion. Two nuclei in the baby hives, with a thousand bees to each, get along very nicely. If the nucleus box is smaller, and has only two or three hundred bees, it will not maintain itself through the season without putting in a fresh lot of bees; but when we put in a thousand at the very beginning, it will maintain itself through the season; and after the season is over, and the queens taken, the bees may be shaken into

a large wire-cloth box and form a few more colonies.

Taking it all in all, if the plan is *properly worked*, we do not lose any bees, but simply borrow somewhere about 85 pounds of bees, and at the close of the season make them back again into full colonies. Of course this lot is of an entirely different generation. The former lot have died out, and the new lot takes its place through brood reared in the baby nuclei.

Our Mr. Bain prefers to work with five frames to the twin nucleus, and not have any division. In other words, he will have a five-frame box of bees. When there are two lots of bees to these little boxes, queens must be taken away as fast as they lay, otherwise the queens become discontented and swarm out.

In our next issue we will show you some operations at our home yard in charge of Mr. Bain.

### CALIFORNIA HONEY-PLANTS.

#### The Loganberry.

BY W. A. PRYAL.

The loganberry has been suggested as a honey-plant, and some time ago Mr. Morrison wished that some one in this locality



FIG. 3.—SUPPLYING BABY NUCLEI WITH RIPE CELLS AND SUGAR SYRUP.



THE HIMALAYA BLACKBERRY.

might tell something about it. I have been familiar with this plant quite a number of years; but I have never noticed that it is sought by the bees any more than is the red raspberry. The loganberry is not as extensively planted as it was some years ago, owing mainly to the fact that the public has not fallen in love with it. Unless real ripe when picked, the berry is quite acid; but when mixed with raspberries and blackberries it produces a jam that is excellent.

#### THE HIMALAYA BLACKBERRY.

If there is any berry in California that deserves culture by the apiarist more than any other it is the Himalaya blackberry, which is of rather recent introduction. It secretes nectar at a time when other berries are on the wane, and it continues well into the fall. The fruit is borne in large bunches, as many as twenty or more being in a cluster. The flowers are possibly a little larger than those of the common blackberry, and are slightly tinted with a pink or purplish tinge. The fruit is not as large as that of the common varieties (see illustration), but it is borne in

far greater abundance, and its flavor, when fully ripe, is delicious. The vines grow from ten to twenty feet long, and have a rambling habit, so that in cultivation they must be trained on a fence or trellis. I believe the plant will not stand the rigor of the eastern climate.

#### PRAISE FOR THE LIPPIA.

The first favorable notice I ever saw of the *Lippia* as a honey-plant was in GLEANINGS. It was then restricted to one or two small sections of this State, but it is now more largely distributed, owing mostly to the fact that it is being used for lawns. It is remarkable, the number of bees that will get to business right down on the ground, I might say, in their eagerness to collect the nectar from the tiny blossoms of this plant. I should judge that the plant spreads by means of the seed, although the writer of a paragraph in one of our California nursery catalogs states that it does not grow from seed.

#### A MIX-UP IN THE NAME OF THE HONEY-SAGES.

Some twenty-five years ago there was no botanical name for the California sages. The first person, to my knowledge, to throw any light on the real botanical name as then understood was Prof. A. J. Cook, in the *California Apiculturist*, who placed them in the genus *Audibertia*. To this genus they have been assigned by nearly all botanical works until lately. When I received the last edition of the A B C and X Y Z of Bee Culture, however, about the first thing that arrested my attention was the article on our California honey-sages. It is the same as the article in the two previous editions, except the opening line, which reads, "Sage (*Ramona stachoides* and *palmer*—Sargent)." This was new to me, and I thereupon consulted all the works at my command at home, but none of them recorded any change. I then referred to the last edition of Prof. Cook's "Bee-Guide," and saw that he now uses *Ramona*. I therefore wrote to Prof. E. J. Wickson, Director of the Agricultural Experiment Station, and Professor of Horticulture of the University of California, and he referred my inquiry to Dr. Hall, of the Botany Department of the University. The doctor's reply follows:

Mr. W. A. Pryal:—Professor Wickson has asked that I reply to your inquiry concerning the botanical name of our native honey sages. I am sorry to report that there is much diversity of opinion among botanists as to the genus to which these plants should be referred. In all the older works they are referred to *Audibertia*, and perhaps the wisest plan at present would be to retain this name until some agreement can be reached. The white sage, so common throughout Southern California, was *Audibertia polystachia*; the black sage was *Audibertia stachoides*; the crimson-flowered sage was *Audibertia grandiflora*.

Professor Green is of the opinion that the white sage belongs to a distinct genus which he has named *Ramona*. Briquet, the Swiss authority on this family, has extended Green's genus to include the black and crimson-flowered sages. According to this last authority these three would, therefore, be *Ramona polystachia*, *Ramona stachoides*, and *Ramona grandiflora*.

There is still another opinion prevalent among botanists; and that is, that all of these plants should be referred to the genus of true sages—that is, *Salvia*. Since the specific names mentioned above are preoccupied in *Salvia*, it is necessary to change some of them if the genera are combined. The white sage has



not yet received a valid name under *Salvia*. The black sage is *Salvia mellifera* (Green), and the crimson-flowered sage is *Salvia spathacea* (Green). There are other species, of course, which are concerned in this mix-up; but the three mentioned above are the only ones of much importance as bee-plants. H. M. HALL.

No, I would not hold the doctor responsible for leading me into "hopeless confusion" in this matter; but what can we laymen do "when doctors disagree"? While talking with Mr. Ralph Benton last week he told me that he intended to assign the sages in his forthcoming work on bees to the *Salvias*, as outlined in the last paragraph of Dr. Hall's letter above. I remember that, in looking over the sages in the botanical garden of our university, I notice that the honey-sages are classed under *Salvia*. It looks to me as though the next editions of our bee-books would have to be revised in regard to the names of these world-famous honey-secreting plants.

Oakland, Cal.

[We shall adopt the name *Salvia* in the next edition of our work, "The A B C and

X Y Z of Bee Culture." Mr. Morrison put in the Latin name in our last edition. He used the best information that we then had. —ED.]

## PUTTING UP BEES AND QUEENS TO BE SENT BY MAIL.

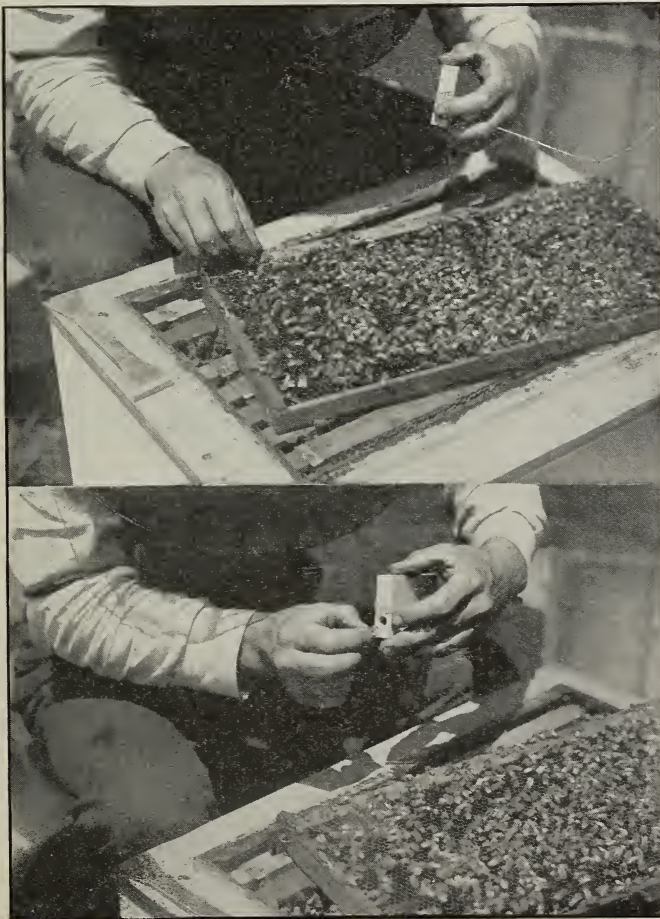
BY E. R. ROOT.

Visitors who come here to look over our bee-yards are often greatly interested in the process of putting the queen and her dozen or so of attendants in a mailing-cage. We dare say there are many old and experienced honey-producers, not to say beginners, who would find themselves a little awkward if they were to attempt the feat. As one sees with what deftness our experienced men pick up bees and poke them through a small hole, it looks very simple; but let one try it for the first time, and he will get his fingers and thumbs stung, and he may fuss away at it a quarter of an hour; and by the time he

gets ready to pick up the queen he may be so nervous that she will be very lucky if she gets inside without having her ribs punched or her head smashed.

But even experienced men get their fingers stung more or less; for often a bee, after being poked through the hole, will turn about and deliver a sting. Sometimes after a yard man has been putting up queens all day he will complain that his fingers and thumbs are numb, because on some days he will get stung several times.

Almost every queen-breeder has his own way of holding the cage. In the illustration Mr. Bain shows how he does it. As will be noticed, the frame is laid on top of the hive, and from it bees—preferably those with their heads in the cells sucking honey—are picked up, because their wings are then just right to grab, and because, further, it is important that they be well filled with honey before they go on a journey. Sometimes the bees are put through the hole head first, and at other times they are stuck through sting end first. The last-mentioned way has the ad-



HOW BEES AND QUEENS ARE PUT INTO A MAILING-CAGE.

vantage of preventing the bee from stinging; but owing to the fact that bees always crawl forward it is the rule to poke them in head first. As each bee goes in, the finger is put over the hole to hold those already in the cage; then just the moment another bee is to go in, the finger is removed, a bee is inserted, and the finger is put back. It is this finger, usually, that gets the sting if any.

You will note, also, that the cage is held in such a way that the hole is on the lower side, and that the wire cloth is on the side next to the operator, and just as soon as the bee's head is poked into the hole it crawls up and away from the hole.

Mr. Bain says it makes all the difference in the world as to the strain of bees being handled, as to the number of stings one will get. Caucasians are very much worse than Italians, and some strains of Italians are worse than other strains. Some bees he can pick up with one wing, or any old way, and poke them into the hole, while others he has to grab very carefully, taking hold of both wings.

As to the matter of numb fingers, he explains there is no need of getting stung so many times as to produce numbness. But sometimes, he admits, when one is in a hurry he will go ahead regardless of stings, when his fingers will become more or less numb.

## CARPENTRY FOR BEE-KEEPERS.

### Painting Hives.

BY F. DUNDAS TODD.

Usually I am blamed for showing too much indifference for appearances; but I frankly confess that an unpainted hive is a positive eye-sore to me. The charm that assuredly belongs to a well-dressed individual is due very largely, from my point of view, to the fact that he (and especially she) gives ocular proof that his person is well cared for. It is the same with a lawn. Neatly trimmed grass is a guarantee of care; a tangled maze is the reverse. So an unpainted hive suggests there is nobody round who cares for the bees, excepting in a perfunctory way.

Now, unpainted hives may be good enough for such localities as Marengo, Ills., and Borodino, N. Y., where the summer rains soon pass away, and the hives are cellared in winter; but if Dr. Miller and Mr. Doolittle were transferred with their apiaries to the Puget Sound region they would at once invest in a few gallons of paint and proceed to wield the paint-brush with patience, perseverance, and perspiration. If they did not, their hives would soon be on the junk-pile, and both could make a fresh start with a new style if they desired to do so.

Not knowing any thing about paint and painting I asked a few of my acquaintances in that line of business for some advice. Summed up it amounted to this: Give many thin coats rather than a few heavy ones. In detail, give a couple of priming coats, then a

coat of paint, the priming coats to consist of raw linseed oil and white lead. The raw oil takes a much longer time to dry than the boiled oil; but I am assured the effect is much better.

When I start upon a pile of hive-bodies, covers, or frames in the flat to put them together I always think of the man who undertook to cook rice for supper when his wife was down town shopping. Putting a pan on the stove he filled it with rice and water. In a little while the pan began to overflow, so he got another and divided up; then as the bulk in both got beyond the evident capacity, he drew on other kitchen utensils one by one, with the result that his wife, on her return, found him surrounded by at least a dozen dishes, ranging from a wash-basin down to soup-plates, each one overflowing with rice in a more or less uncooked condition.

There is not much room in my barn, so very soon I am forced to stack my creations out of doors. Lately I have changed my tactics, and now work on the semi-ready fashion that is being pushed in the tailoring world, and apply the priming coats while the parts are in the flat. In dry summer weather a coat of paint will dry in a day so one may get out by the semi-ready system a finished body, cover, or bottom within twenty-four hours if necessary.

On the bench I pile about two dozen pieces on end, wedging them between a couple of boxes, and apply the first priming coat to the ends, then turn them over and do the same with the opposite ends. Then I lay the pile flat and prime the faces one after another, stacking them as finished round about. When dry the second priming coat is applied the same way.

The first priming coat is mostly oil, the great idea being to get it to soak well into the pores of the wood. For twenty square feet of surface one will use nearly a quart to which has been added and thoroughly incorporated with it, first with a stick, then with a brush, enough of the white lead to turn the oil decidedly white in the can but not when applied to the wood. This looks like a big quantity of oil, but the ends will soak up nearly half of it.

This coat is applied with a two-inch flat brush, first running round the margins, then worked in by cross-sweeping, lastly smoothed by even strokes the long way of the board.

The second priming coat is again oil and white lead, but this time the coat should show decidedly white on the wood. Only half the quantity absorbed in the first coat will be taken in this time.

The third and final coat is applied when the parts are nailed up. It consists of white paint to which it is usually advisable to add about an equal quantity of oil.

In conclusion let me repeat, use raw linseed oil only, no drier; work well in, but make the coating thin, and dry thoroughly between coats.

Victoria, B. C., Can.



## ANOTHER DIRECT METHOD OF INTRODUCING QUEENS.

### Gradual Introduction to a Few Bees at First.

BY W. F. WOLFE.

This season and last I have used a slight modification of the various methods of queen introduction usually used. Instead of allowing the queen to run directly into the hive, as Mr. Simmins recommends, or using a cage as most other authorities do, I place the queen alone in a small glass chamber on top of the quilt (an inverted drinking-tumbler, if made of smooth clear glass, does very well). I then allow three or four bees to go up into the chamber or tumbler to the queen. I now close the opening between the hive and tumbler, and watch how the bees treat the queen. If they treat her well I allow about a dozen more bees to enter again, closing the opening, and watching what happens. If all goes well I allow as many bees to enter the tumbler as will comfortably fit there, again closing the opening, this time for about 15 minutes. At the end of that time I return; and if all is peaceable I allow the queen and bees to enter the hive.

The only time that this method has failed with me was once in July, 1908, when, the instant I opened the hole in the quilt the queen bolted down through it and was at once balled. I then had to open the hive and rescue her, getting several stings in the process, as I dared not wait to light a smoker and smoke the hive.

Since then I have been very careful to make only a small hole in the quilt, to cover it with a piece of thin glass, which can easily be slid off or on to the hole without moving the inverted tumbler, and especially to see that the queen's back is turned when opening the hole for the first time.

This method in my opinion has several advantages.

1. If the small hole is made in the quilt with a sharp knife it scarcely disturbs the bees at all, or, better still, it can be made 24 hours earlier, and covered with the piece of glass.

2. The readiness of the bees to accept the queen can be quite accurately judged by the behavior of the first three or four bees admitted to the royal presence.

3. If they attempt to ill treat her she can easily be rescued. I have never found it necessary to do this, as three or four bees can not ball her; and, though they occasionally chase her about and pull her legs, etc., if no more bees are admitted for a few minutes they usually begin to feed her peaceably. If at first the few bees admitted have been disorderly it is better to admit only a few bees at a time, say three or four, instead of about a dozen. As soon as these have become used to the queen more may be admitted.

4. As a rule, within a few minutes of the queen entering the hive proper almost every bee will follow her, forming a guard for her,

and at the same time making it easy to remove the glass chamber without any necessity for a veil.

Of course, before attempting this or any other method of introduction the old queen must be removed, and it is better, especially for a beginner, to make the bees broodless 24 hours in advance, either by the "shook-swarm method" or the Alexander plan of getting rid of unsealed brood or some other way.

Skibbereen, Ireland, July 26.

## OVERSTOCKING.

### How it May Act Like a Boomerang.

BY MORLEY PETTIT.

Mr. Doolittle, p. 194, April 1, commends a man for being so "conscientious" that he "would not think of locating in a territory already occupied by somebody else." Is it a matter of conscience? Does not that expression put the matter of overstocking on a slightly wrong basis? I would rather say "wise" than conscientious. The matter of priority rights has long been before the bee-keeping world, and I suppose always will be. The act of overstocking is a boomerang. Unlike mercy, it curseth him that gives and him that takes. If a man turned a bunch of steers into a pasture already occupied by all the animals it would support, he would injure himself as well as the owner, who, by previous possession, had a prior claim. On the other hand, the man who had turned a few animals into a 1000-acre common, and then tried to keep all others out, would be a regular "dog in the manger." Again, in the case of the bees there is a third party who is rapidly claiming recognition. The farmer who plants the fruit trees, alsike, buckwheat, or whatever it may be, has the right to the privilege of trading the honey of his blossoms for fruit and seed through the agency of the apiarist's bees.

It is a vexed question, but one that has not, happily, to my knowledge, caused any serious conflicts among the apicultural fraternity. No one knows or can foretell with certainty just how many colonies any one spot can support to the greatest advantage to the bee-keeper. The honey crop is dependent upon weather conditions, not only from year to year but from day to day, during the flow. The seed and fruit grower has no cause for concern in the matter so long as he is sure that the place is not understocked. The more bees the better for him.

A good illustration of this occurred in the neighborhood of the Marble apiaries last fall. Right adjoining each of two yards, a small field of buckwheat was put in so late that it bloomed after every thing else was done blooming. The weather happened to be favorable. The bees devoted their whole attention to it, as there was nothing else for them to do. In consequence, the owners of these fields had a better yield per acre than any of their neighbors.

I wrote the above before finishing Mr. Doolittle's article. His conclusion certainly puts danger of overstocking a long way off. Jordan Harbor, Ont., Can.

[There can be no question but that, when a man brings a lot of bees into a locality that is already well stocked, he is working against his own interests. But the question is, "How are we going to educate him so that he will be 'wise' enough not to locate there in the first place?" Mr. Pettit has presented a phase of the question that has not been receiving the attention it should.—ED.]

## HEADS OF GRAIN FROM DIFFERENT FIELDS

THE LIPPIAS, OR CARPET GRASSES, AS HONEY-PLANTS.

Dear Mr. Root.—I received your letter concerning lippia in California, as well as your correspondence with Mr. S. J. Morrison, of Chico, Cal. According to Britton and Brown, there are about a hundred species of lippia found in tropical and subtropical America, with a few in Africa. About nine species occur in the southern and southwestern United States. According to this same authority, *Lippia nodiflora* is found in wet and moist soils in Georgia to Southern Missouri, Florida, and Texas. It is also found in California, Central America, and the West Indies, and the warmer parts of the Old World. You will find an article by W. K. Morrison on this plant, in GLEANINGS, 1903, page 141.

Concerning the introduction of *Lippia repens*, to which Mr. S. J. Morrison refers, the following is quoted from Bailey's Cyclopaedia of American Horticulture:

Under the name of *L. repens*, Franceschi introduced into California in 1900 a very interesting perennial plant designed as a substitute for lawn grass in the South. It makes a remarkably dense mat, and bears numerous tiny flowers an inch or so above the ground. The flowers are borne in a dense, bell-like head, covered with many tightly overlapping bracts. The flowers appear in rings, beginning at the base of the little head. Franceschi writes of this plant that it thrives in any soil, no matter how poor, rapidly covers the ground, smothers weeds, stands trampling, requires much less water than grass, needs no mowing, can be easily taken out if desirable, and is used in Southern Europe for tennis grounds. Voss pictures this plant with an erect and tufted habit, and refers it, together with *L. canescens*, to *L. nodiflora*. These two names were kept distinct by Schauer in De Candolle's Prodrum, and specimens of Franceschi's plant come nearer to *L. canescens* than to *L. nodiflora*. Schauer's distinctions are given below, but there is doubt as to the chief point of difference; viz., whether any of the plants are annual. They all take root at the joints.

I saw a lippia, which is probably the one referred to as *Lippia repens*, in the San Joaquin and Sacramento Valleys. It is also found now in several places in Southern California.

E. F. PHILLIPS,  
Washington, D. C., Oct. 6. In Charge of Apiculture.

SPLINTS VS. CUT WIRES; SHOULD WE PROVIDE FOR DRONES IN THE BROOD-NEST?

I have ordered my medium brood foundation large enough to fill the Hoffman frame. I intended to use splints, but I thought of the scheme of cutting wire long enough to reach clear across the sheet of foundation the narrow way, and imbedding into the foundation before it is put into the frame; and when it is fastened in the usual way, fasten the ends and bottom with wax. If necessary I could put a drop of wax on the wire to make it more safe. I would put about 8 wires to the frame. I do not care about a little extra work, for I can do all this in the winter, and I want the best. How many square inches of drone comb do you allow your colonies? WM. MIDDLETON.

Caro, Mich., Oct. 5.

[Any wire large enough and stiff enough to hold up the foundation without support at the top or bottom will be rather too expensive. The wood splints would be far cheaper. It would be our recommendation for you to use splints if you desire to economize on cost.

As to how many square inches of drone comb we al-

low our colonies in the brood-nest, we will say that, ordinarily, there will be enough of drone-cells when full sheets of foundation are given, so that no special provision for drone comb need be provided. In asking this question we suppose you have in mind that, if there are no drone-cells in the brood-nest, the queen will be likely to go up into the sections, where she would find some drone comb and lay drone eggs. While this is true, as a general thing there will be enough drone-cells scattered around here and there in the brood-nest so that, ordinarily, we would not think the queen would be inclined to go above. Should she show a disposition to do so, we would use excluders or change the strain.—ED.]

CAN HONEY-DEW BE MADE LIGHTER IN COLOR?

In replying to the query of a subscriber recently as to what to do with dark bitter honey-dew, it seems to me that you gave too little attention to what be a most important point. You said that it had been suggested that such honey be filtered through charcoal, but that it probably would not help the flavor. Now, I read that the bone-black charcoal used by sugar-refiners not only decolorizes but that it entirely removes the bitterness of ale. Being a bee-man I don't know any thing about ale; but it seems to me that any thing which will remove the bitterness from either the taste or the effect of such things ought to have a wider application—that even the worst honey-dew might be made into a decent article in that way. But aside from bad flavor, could not dark honeys of any kind be prevented from becoming the drug on the market which they are in many places, if, by some such process, they could be made of fair color, especially when refiners can sell white sugar only a cent or so higher per pound than brown? and surely no one could object to pure honey being made more so. If any such thing is possible, these dark times ought to be a good time to discuss it.

McConnellsville, O., Sept. 21.

H. D. TENNENT.

[We are not able to inform our correspondent whether bone charcoal would lighten dark honey or improve its flavor. Perhaps some of our readers can inform us. Whatever we do we must not make the mistake of changing the character of our honey chemically or we may get into trouble with the pure-food law. It is presumed, however, that the elimination of coloring matter and certain unpleasant flavors would not in any way affect the chemical composition of honey or honey-dew. Perhaps, therefore, some of our readers who have experimented along these lines can give us some information.—ED.]

MORE HONEY STORED IN SUPERS PROVIDED WITH SHALLOW FRAMES; HANDY FOR UNCAPPING.

Mr. Louis H. Scholl is certainly right when he recommends the use of shallow extracting-frames. I am using quite a number this season, and in my opinion they have many advantages over the deep L. frames. As we had a rather light flow of clover honey this season I noticed that all colonies which had shallow frames stored considerably more honey than colonies that had the deep L. supers. While the honey was all capped over clear to the bottom in the shallow frames, there was not more than a third capped over in the deep L. frames.

It is now July 26th, and colonies having shallow supers are storing a little honey, while nothing is done in the deep L. frames. Another great advantage in using shallow frames is seen in extracting-time. They are much easier to uncup than the deep L. frames, and they are certainly fine for chunk honey. In the future I shall use them exclusively.

La Crescent, Minn.

G. A. BARBISCH.

A QUICK WAY OF GETTING RID OF LAYING WORKERS.

After trying a number of plans to rid a colony of laying workers I hit upon a plan that may help others. I took an empty hive, put in two frames of brood and several frames of foundation, and introduced a new queen in the usual way. I next took a hive with laying workers, set them aside, and put the new hive on its stand in place of it. I then put on a screen in place of the cover, with a mesh small enough so that bees could not get through. I removed the bottom-board from the old hive and placed the old hive over the new one. I next put a Porter bee-escape on the entrance of the old hive; then when the bees came out and would return from the field they would enter the new hive. In four days the bees had released the new



queen, and she commenced laying. I left the screen on about twenty days, when all signs of laying workers had disappeared.

Bradentown, Fla., Aug. 2.

E. F. HURLEBAUS.

#### ABSORBENT CUSHIONS, IF VENTILATED, DO NOT BECOME WET BECAUSE OF THE MOISTURE FROM THE BEES.

I have been reading with much interest, some curiosity, and now and then amusement, on absorbent vs. sealed covers. I heartily agree with J. E. Crane (page 225, April 15) in principle and results as he expresses them. I have always used porous absorbent covers, and experimented with sealed covers. The latter have seldom given good results. I do not claim that it would be so for every one. I have double-walled chaff hives with the telescope covers. These covers have a  $\frac{5}{8}$ -inch hole in the gable point with a small piece of mosquito-net tacked over to prevent bother in summer from robbing. That is the secret I claim. I fold up old sacks or any old cloth—I prefer the sacks—and put on three or four, or as I think sufficient, if the supply holds good. I always put small sticks across the top of frames. This winter I put a folded newspaper over the center between some. It seemed to work as well, and probably held some warmth. The moisture passed around the edges. If you put a board or any thing tight over your porous cover in cold weather you will get condensed moisture and have a wet covering. Otherwise I have never found a wet cover except from leakage. I think the small hole in the gable has something to do with keeping the covers dry by allowing the moisture to pass out. WALTER GARABRANT.

Chester, N. J., May 10.

[Absorbents of any kind will be drier if there is ventilation provided at the top. To that end the telescoping cover should not come in contact with the tops of the sections. There should be a space of at least one inch, and ventilating holes under the gables.

In our locality, at least, the sealed cover and warm packing apparently give a better result. We have a curiosity to know to what extent you have tried a sealed cover versus the absorbing plan side by side. In our own experience we have wintered from 150 to 200 having absorbing cushions, and a like number with sealed stores and cushions. We not only did this one year but several years running. In most cases the sealed cover and cushion had the advantage in a drier and nicer cluster. In many cases the absorbing cushions became wet and soggy, notwithstanding there was plenty of air space under the tops of the cushions.

In almost every case where the cover is not sealed down so that there is chance for the moisture to escape up through the crack between super cover and hive, the packing will be wet along the latter part of winter. It has occurred to us that some of those who have tried the sealed cover and found it unsatisfactory have not actually had the covers sealed down to the hive. This is very important.—ED.]

#### MEDIUM-SIZED COLONY WITH LAYING QUEEN STARTS CELLS.

On August 23 I examined one of my colonies and found lots of young bees and sealed brood, but no eggs, larvæ, or queen. The queen formerly in the hive was so small that the wire queen-excluder would not prevent her from getting through, and so dark that three different ones failed repeatedly to find her. She had been very prolific, and the absence of larvæ proved that she had gone. The probabilities are that she was lost on the 12th of the month, when some sealed brood was taken from this colony to help a nucleus. No queen-cells were found. Several wax-worms were noticed.

Aug. 28 I received a new queen and slipped the introducing-cage on the bottom-board under the frames and let the bees gnaw her out.

Sept. 1 I withdrew the empty cage without making any disturbance, having attached a wire to it before putting it in.

Sept. 10 I opened the hive and found the queen perfectly at home. There were some patches of sealed brood; but on the side of one new comb was a beautiful unsealed queen-cell looking like a miniature volcano with an open crater. At the lower edge of an older comb were two more cells that were quite small, and one of these was sealed over. Of course, I destroyed all these and looked carefully for more cells. Now, why should queen-cells have been started in this hive that was not heavily populated with bees, and that contained a young laying queen? My helper, a full-blooded negro, offers the following suggestion:

"Some er dem bees knowed dey queen was lost, and didn't know there was a new one; so when dey come across some aigs they didn't stop to ask no questions, but just set about makin' one."

Florence, Ala.

H. A. MOODY.

[The fact that there were some patches of sealed brood in the hive on Sept. 10 would seem to indicate that there may have been eggs that you overlooked on Aug. 23; that is, the old queen was still in the hive on that date, and was gradually tapering off in her egg-laying, and possibly at the time of your examination had stopped altogether. In the meantime, while the new queen was in the mails, this old one laid some fresh eggs, and from these were reared the cells and the brood. While the new queen could have laid the eggs that supplied the cells and the sealed brood, it is our opinion that they came from the old queen. We never knew of a case where cells were started when a good young queen was present. It very often happens that, when a queen is introduced, if the bees have in the mean time already started building cells, they will keep on doing so and complete their work. The introduced queen will usually destroy such cells, but she does not always do so. The queen referred to acted contrary to the general rule. When introducing we always make it a rule, for that reason, to destroy any cells that may be present at the time of caging.—ED.]

#### A GOOD QUEEN REARED UNDER ADVERSE CIRCUMSTANCES.

In the spring of 1908 I found my premium breeding-queen with less than a teacupful of bees, and in bad condition generally. As she was four years old I hardly expected her to last through the season, but wanted to raise a few more queens from her. April 2 I looked into the hive, and, to my surprise, found a patch of brood five cells wide, and about three inches long on one side of one frame only. In this brood were one queen-cell and nine drone-cells, all sealed—not another bit of brood in the entire hive. The old queen was still alive. April 23 I found a young fertile queen in the hive, and a cluster of bees between two combs less than three inches in diameter. I let them alone, thinking the queen would be "no good;" but they began to build up until, at the end of the clover flow, they were as strong in bees as most of the colonies in the yard, but short of honey; however, when the fall flow came on they filled the hive and stored as much surplus as any colony. The queen proved to be purely mated, and must have been mated to one of the drones raised in the hive with her.

I have raised many queens in the past, and know how easy it is to get inferior queens under the best conditions; but it seems easy for the bees to raise good ones under very adverse conditions. The old queen lived till some time in June; but I think she laid no eggs after the first lot early in spring, as she was shrunken to about the size of a young worker. The only way I could recognize her was because she had no wings. Have you ever seen any thing like this in queen-rearing?

Marion, N. Y.

J. A. CRANE.

[When you surmise that the young queen was fertilized by one of the drones in the hive, we assume, of course, that you mean that the act took place in the air and not in the hive.

Yes, cases are on record where young queens reared in late winter will be fertilized by a stray drone in the spring, and become the mother of a good colony; but this does not disprove the rule that a good queen should be reared in suitable weather under the best conditions.—ED.]

#### BEE-KEEPING IN VICTORIA, AUSTRALIA.

Bee-keeping in Victoria is, in my estimation, very similar to bee-keeping in America so far as diseases go—that is, foul brood, paralysis, spring dwindling, etc.; but so far as honey-flows are concerned you differ very much. You seem to have some good honey-flows, but they are very short, while over here we have a flow lasting sometimes four or five months, and then not averaging much more honey than your short flow.

At this date the bees are just awaking. Whenever the sun shines for a few hours the bees seem to enjoy it very much. The coming season promises to be a very good one in most parts of Victoria. Last season promised very well; but through the drouth that we had, and then the fearful heat-wave of January last (110 degrees in the shade for seven days running) put all hopes of a good honey season out. However, I can not complain with an average of 120 lbs. per hive.

Maryborough, Vic., Aus., Aug. 24. F. HOLLAND.

## CLOSE GROUPING OF HIVES FOR WINTER; MOVING IN COLD WEATHER.

I packed 12 of my single-wall hives as follows: I placed boards slightly above ground for a platform, and put the hives side by side as close together as I could, with an empty hive at either end. On top of each hive was a super filled with chaff. Then I nailed a strip of two-ply tar roofing-paper on the front, just above the entrances of the hives, and another to the board under the back of the hives. The outer edges of these strips were brought up over the hives and nailed to a 2 x 4 lying lengthwise across them. I fixed the ends so there could be but little circulation. I have since noticed,

the flowers are now nectarless. So far as I know, there is no more remarkable illustration than this of the power of honey-bees to learn from observation. Do any of your readers know of other instances? Waldoboro, Maine. HERBERT R. OLDIS.

[The statement of Buttel-Reepen regarding the bees on buckwheat applies to most localities; but there are some places where bees work on buckwheat all day. This is because there is more nectar in buckwheat than the bees can gather. There are other places where the bees apparently quit working about nine or ten o'clock.

On the question whether bees learn by observation, there is any amount of evidence to show that they very soon adapt themselves to conditions. Whether they will learn by experience in the same way we do, we can not say positively. Some things take place in bee nature through instinct.—ED.]

## LABELS FOR THE OUTSIDE OF SPLIT SECTIONS.

I have noticed a great deal said about split sections for honey. Some do not favor them, simply because the outside appearance of the section shows the edge of the sheet of foundation. It occurred to me that a neat label pasted around the outside of the wood might overcome this trouble. HIRAM M. SHARP. San Antonio, Texas, Jan. 29.

[A small label pasted on top of a section will cover up that portion of the comb projecting through the top only. The one objection to such sections is the suspicion that is liable to arrive in the mind of the consumer that the honey is manufactured because there appears to be a portion sticking through the split sides that does not look like the work of bees. If a label went clear around the section it might overcome to a certain extent this objection. On the other hand, to cover up might look to the consumer as if we were trying to conceal the work of man. As we all know, we bee-keepers have nothing to keep from the public; but if that public gets hold of half a truth, it may draw erroneous conclusions, and conclude that the whole thing was "manufactured," and that we were trying to cover up something. We are frank to say that we would prefer to avoid the split section entirely, label or no label. In either case it is liable to mislead.—ED.]

## BEE-KEEPING IN MANITOBA, CANADA; PREVENTING AFTER-SWARMS.

My home is in the suburb of Norwood, which is just 1½ miles from the center of Winnipeg, and is in the city of St. Boniface. I had six colonies in the back yard the past summer, one of them being a stray swarm which I got right in the heart of Winnipeg, and hived successfully. I do not run my bees for comb honey, but use shallow extracting-supers, never extracting from the brood-nest. Only three colonies yielded a surplus, which totaled about 90 lbs. I did away with second swarming this year by hiving on the old stand, giving the supers to the swarm, placing the old hive alongside the new hive, but facing the reverse way. At the end of three days I had gradually turned the old hive round, facing the original direction, and then picked it up and gave it an entirely new position. This plan strengthened the swarm and depleted the parent stock, and there was no second swarming.

Our chief honey-yielder is white clover, which grows wild over all the vacant lots. We have also Canada thistles, but the authorities are getting after them with the scythe. JOHN BAXTER.

Norwood Grove, Manitoba, Nov. 23.

[The plan here spoken of is a slight modification of a well-known and reliable plan of preventing after-swarms.—ED.]

## IS THERE MORE POLLEN IN THE BLOSSOMS WHEN THE BEES HAVE ACCESS TO THE PLANTS?

From being considered a nuisance in many cases, bees are now becoming recognized as a helpful factor in the pollinizing of fruit-blossoms; and the bee-keeper is not quite as likely to be insulted, and threatened with trouble as formerly, even if the bees do happen to visit the over-ripe or damaged fruit once in a while, or even give some one a gratuitous sting.

The stand taken by the experiment stations is the reason for this change of opinion in a great degree, as the statement of a bee-keeper was considered as made by one with an ax to grind, and generally doubted.

Now, there is one point in connection with the pollinizing of flowers that I have never seen mentioned.

page 1427, Dec. 1, 1908, a somewhat similar plan, spoken against by Mr. Doolittle. I did not fill in between the hives, however, with chaff, thinking the dead-air space better.

I wish to move 38 colonies now, packed in double cases, to another location in the same yard before next spring. I intended to do so as late in the spring as possible, but before the weather became warm enough for the bees to fly. Would you advise moving them during the winter, or is my plan all right, of waiting as long as possible, say until the latter part of March or the first of April? A. P. LOOMIS. Hunter, N. Y.

[The plan that you describe would be satisfactory in a mild climate, but it would be very much better for your locality to use packing in front and rear of the hives. There ought to be a space of at least four inches.

We would advise you to defer the matter of moving your bees until next summer. You can then move them a couple of feet at a time, on successive days, in the direction where they are to be finally located, until they reach their final destination. If you wintered in the cellar and kept them indoors all winter you could set them out next spring anywhere you chose.—ED.]

## INFORMATION WANTED IN REGARD TO COTTON AS A HONEY-PLANT; FLAT-BOTTOMED FOUNDATION.

We occasionally see mention of cotton honey in the journals; but I have never read any thing definite about it, nor have I found any one who knew any thing about it. I notice, p. 491, Aug. 15, that Mr. Louis H. Scholl says that east and north of him cotton was yielding plenty of nectar.

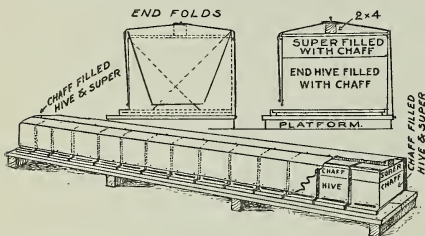
This is my first year in this State; and as this has been a poor year I can tell nothing more than that I have never seen more than a dozen bees on all the acres of cotton I went through, and they were for pollen. D. D. STOVER.

Mayhew, Miss., Oct. 2.

[Cotton does not yield honey every year, and even then only in certain localities.—ED.]

## BEES AND BUCKWHEAT; DO BEES LEARN BY OBSERVATION?

"If colonies stand in buckwheat" says Buttel-Reepen, "the flight is lively in the mornings until about ten o'clock, then it lessens, and is entirely quiet for the greater part of the day, beginning vigorously again the next morning." This statement, published some time ago in GLEANINGS, has led me to observe the behavior of bees on a field of buckwheat in Southern Maine. The results observed differ slightly from those given by Buttel-Reepen, and are, perhaps, worth recording. The bees begin visiting the flowers as soon as they leave the hive in the morning, and continue to work upon them until about 12:30. Their visits then quickly decrease in number until about 1, when they cease entirely. But for an hour or more afterward the bees may be seen occasionally, flying from blossom to blossom, pausing, however, for only an instant, as they apparently discover at once that





The greenhouse men used to scatter the pollen by hand, and get some fruit; but now they generally keep bees, and get much better results than by hand work. Now, is not this the result of the bee working, or exercising the glands of the flower in some way? I have watched bees gathering pollen many times, and they are always crowding into the blossom more or less. Sometimes they have to open the calyx of the blossom in order to get into it. Who knows but that this moving or exercising of the stamens and pistils causes the pollen-dust to put forth extra efforts, or stimulate them in just the manner needed for the performance of their functions? There are many blossoms which, seemingly, should need no help in distributing the pollen; but they are or seem to be nearly as dependent on the bees or other pollen-gatherers as blossoms which are entirely self-sterile. I should like the opinion of some scientific bee-keepers on this subject, as I think it is a profitable one for investigation.

Marion, N. Y.

J. A. CRANE.

#### BEES AND HONEY AT THE INDIANA STATE FAIR.

The bee and honey department was remarkably well represented this year, there being five exhibits, each being very creditable. Our State Board offers the sum of \$248 in cash premiums in this department, and each of the eight entries is open to any one who cares to compete. It is possible that, in the future, we may have a building of our own for this department if the interest taken continues. Our daily papers mentioned in their headlines the attractiveness of this department, and the interest shown by the visiting public was more than gratifying.

Our State Board have arranged the list so that no hardships are required in entering, such as "must be produced by the exhibitor," and so forth. There is one entry for Italian bees in observatory hive and another for foreign bees in observatory hive other than Italians. No premiums are offered on black bees or buckwheat honey, but each item is intended to promote the best in apiculture. The list is open to the world; and if any other State has something better, our State Board invites them to bring their goods and come with us.

WALTER S. POWDER.

Indianapolis, Ind., Oct. 2.

#### BUYING OR BREEDING QUEENS.

Is it better for the average person to buy some good queens from some reliable breeder and stick to that line of blood, or buy occasionally from different breeders, and introduce new blood in this way? Our seasons are short, and I find that I must have the best of queens if I get them strong enough to make the most of the raspberry flow.

Benzonia, Mich.

JOHN A. VAN DEMAN.

[It probably depends upon circumstances to a great extent; that is, if the bee-keeper has the time and inclination to do some systematic work along the line of breeding, he could probably succeed better by starting with the best stock which he can obtain from some one breeder, and then developing that stock to suit his particular locality, system of management, etc. For instance, if this bee-keeper produces comb honey, he ought to be able, by judicious selection, to develop the strain of bees particularly suited to his needs in regard to keeping the honey white, entering the supers readily, etc. If he produces extracted honey, on the other hand, he would not care so much about white cappings, but would wish to develop bees which might have some other good qualities.]

If the bee-keeper does not have the time to go into the subject of queen-breeding in the effort to develop bees for certain qualities, we think that, all things considered, it would pay him to buy queens from more than one good queen-breeder, possibly in the end buying principally from one breeder whose bees seem to be the best all-around workers.—ED.]

#### UPWARD VENTILATION OR SEALED COVERS DURING WINTER.

On most of my eleven hives I use a galvanized cover over a super cover, and I put two sticks between the two covers to provide an air-space. My plan for winter last fall, was to replace this air-space with a layer of newspaper carefully cut to size to keep the super-cover warm next to the bees. Four of the hives were arranged in this way. This spring, however, when I removed the covers to examine the bees, under every one of the covers the papers were very wet and the hives inside seemed damp or stuffy. The super-covers also were wet through. The other hives were perfectly dry, and the bees were all right, even though some of them had been nuclei and others had only the thin

super-cover to keep out the cold. The colonies were alive in all the hives; but our winter was exceedingly mild, the temperature being below ten degrees for only a few days.

#### CASCARA SAGRADA AS A HONEY-PLANT.

I don't see chittim (*Cascara sagrada*) mentioned in the A B C of Bee Culture as a honey-plant. I can't say as to the quantity or quality of the honey it produces; but the trees were covered with bees for nearly if not quite two months.

In this locality fruit bloom and Oregon maple start the season, followed by chittim, white-clover, and vetch. From June 25 on they work on dog-fennel and lobelia, both of which make very poor honey. People here generally pay very little attention to their bees, and have them in all kinds of hives and boxes.

Corrallis, Ore.

F. B. HASSETT.

[It is easy to understand why your paper packing became wet. Apparently the under cover was not sealed down after cool or cold weather commenced. The bees would have no means of sealing the same, and consequently the warm breath of the bees would escape from the crack, strike the colder air and condense, making the folds of the paper packing soggy and wet. When an outside protection of this sort is used, the single cover *must be sealed down by the bees*—that is to say, the cover should not be disturbed after they have sealed it during warm weather; for it is impossible to make it tight when the nights become cool and chilly. With an unsealed cover your plan of having a space not packed by which the excess of moisture could escape would be far better. We suggest, however, that during the coming winter you try having a number of hives with the cover sealed down; then paper-pack as you did last winter, and compare these colonies with others having unsealed covers and air-space not packed.]

*Cascara sagrada* in medicine is a well-known cathartic. If it also produces blossoms that yield honey, said honey ought to have an important medicinal value. If any of our subscribers have been enabled to obtain a pure honey from *Cascara sagrada* we should be pleased to know if it has any of the aperient qualities of the plant itself.—ED.]

#### DOES FOUL BROOD EXIST IN BEE-TREES?

Has any authenticated case of foul brood been found in a bee-tree? There are several small apiaries here affected with the disease, and I have heard of ten or twelve colonies taken from trees this season in the surrounding section, and all of them healthy.

Walton, Ky., Aug. 18.

J. G. CRISLER.

[Just at this time we do not remember a definite report going to show that foul brood has been located in bee-trees; but there is no reason why that disease could not be developed in such a domicile as well as in a hive. We may say that a swarm from a colony affected with foul brood will not carry disease; and, consequently, if it absconds to a hollow tree no disease will be subsequently found there. As the average bee-tree is located a mile or more from a bee-yard, its own bees probably would not find an unprotected entrance of a colony where foul brood exists; or, rather, we would say, such diseased colony would be discovered and robbed out clean by the bees in the same yard long before the bees of the bee-tree would get knowledge of it. The presumption is, taking every thing into consideration, that the average bee-tree will not be affected by foul brood.—ED.]

#### HONEY AND ICE CREAM—NOT HONEY SODA.

On page 521, Sept. 1st, you give my suggestion as to the use of honey in connection with the sale of ice cream and soda fountains, etc. However, my idea of this is not clear to all. I recommend that extracted honey be poured over a dish of ice cream and *eaten*, not drank, not only at soda-fountains, but in every home where ice cream is used. It beats "maple-jack wax." Try it.

A good salesman could make a paying business of selling honey alone. Furthermore, if honey could be placed on sale in Schram automatic sealers in candy stores or where ice cream is sold, it would provide a large outlet for honey. Extracted honey is worth 10 cts. a pound wholesale, and if we work we can get that price. It always makes me vexed to see good honey offered below that price.

Northampton, N. Y.

PERCY ORTON.

[We understood that you did not have in mind honey soda; but we saw no reason why honey could not be used in a soda drink in place of a fruit juice thickened with sugar syrup.—ED.]

## OUR HOMES

By A. I. Root

Fear thou not, for I am with thee; be not dismayed, for I am thy God. I will strengthen thee; yea, I will help thee; yea, I will uphold thee with the right hand of my righteousness.

For I the Lord thy God will hold thy right hand, saying unto thee, Fear not; I will help thee.—ISAIAH 41:10, 13.

I suppose we "old fellows" (many of us) get into a fashion of telling the same story over again, forgetting that we had ever told it before; and I hope the readers of GLEANINGS will be patient with me if I, in a like manner, get to telling stories that have been told before on these pages. It is not always because I forget; but oftentimes the story I have told before illustrates some new point better than any thing else, and therefore I take the liberty of trespassing on your good nature in this way. And then there is another thing—this is a changing world. Many of those who read GLEANINGS thirty and more years ago are dead and gone, and younger ones have taken it up, so that the story will be new to the greater mass of our readers, even if there be a few gray-headed ones who are tempted to say, "There, you are telling that same old story over again." But the story I want to tell you this morning I think I have told twice before at least—once, perhaps thirty-five years ago, and at least once since. This is the story:

When I first got a glimpse of the character of the Lord Jesus Christ and of his mission down from heaven to this world of ours, I began telling what I had discovered, just as I have been telling the world about my discoveries with bees, and just as I am telling to all the world now my discoveries along the line of incubators and chickens. Well, when I was almost a new-born child in following the meek and lowly Nazarine, somebody said that a near neighbor, while intoxicated, drove his wife and family out of doors in the dead of night in winter. I knew him, and kept my eye on him, for my conscience troubled me and told me I ought to go and speak with him. I dreaded it, and tried to excuse myself; but the still small voice kept following me something as God followed Jonah and told him to go and preach to the Ninevites. This neighbor, soon after the occurrence, I saw on the streets sober and in his right mind. He turned and went into a shoe-shop where I was acquainted. I followed him in. As I could not well see him alone, and as all of those present knew of his treatment of his family, I ventured to broach the subject. As I told you before, I had been dreading the task beforehand; but when I opened up, as well as I could, before those ungodly men I was almost appalled at the objections they brought up against the Bible and the gospel. For the first time in my life, almost, I realized how poorly I was equipped and prepared to "preach" to any one. I think it must have been about the time I learned to use that little prayer, "Lord, help," and I used it then, mentally; and I

further tried to tell the dear Savior (in my mind) how weak and helpless I felt in trying to answer the rude jests and sarcasms of the crowd before me. While I prayed I absently moved some little pieces of leather that covered the floor, with the toe of my shoe. As I pushed these bits of leather away, a piece of paper came into view. I thought it was a scrap of newspaper, and in my perplexity I stooped down and picked it up. It was a fragment of the sixth chapter of the book of Luke. The little crowd was watching me. I said to the shoemaker (who had been as bitter as any of them) that I had found a piece of the Bible in his shop among the scraps of leather. Either before I read what was on the paper or after, he made an exclamation something like this:

"My God! how did that piece of paper, torn out of the Bible, ever get into my shop?"

The scrap of paper contained, as nearly as I can remember, from the 27th to the 39th verses. It is almost too long to quote here, but I wish that you who love your Bibles (and *everybody* else who is interested in my story) would hunt it up and read it. My little prayer was answered, and it seemed to me almost like a miracle. My critics were silenced, and the man who abused his family was touched. The scrap of Bible did a work that perhaps no human tongue, unaided by that Bible, could do. After the man had given me his solemn promise to be a better father to his family, I said:

"Now, friends, as you see, God has answered my prayer for help. Nobody knows *how* this scrap happened to be among those pieces of leather; but *God* sent it and *placed* it there. I wish to kneel down, with the permission of my good friend the shoemaker here, and pray that God will help us all to be better men than we have been. I shall be glad to have you kneel with me, if you feel inclined to do so; but, of course, you can do as you wish. I am not the one to dictate as to your duty."

I think every one knelt down, and I thanked God for his kindly and timely help, and asked his blessing on all of them. It was a broken and awkward prayer, for it was a new thing *then* for me to pray at all, much less in a public business place like that. Oh! but I was happy, as I went out feeling that the task I dreaded was done. It was one of the first experiences I had ever met of the thrills of joy and peace that come after performing a dreaded duty for Christ's sake. But that was not all. Over in the closing chapter of Malachi there is a verse that ends something like this: "Prove me now herewith, saith the Lord of hosts, if I will not open before you the windows of heaven and pour out a blessing that there shall not be room to receive it." There is a suggestion in that phrase, that "when a man's ways please the Lord" the answer to his prayers will be greater and further-reaching than he has any comprehension of. Just as I stepped out of the door of the shoe-shop the door of an adjoining room opened, and the proprietor of a drugstore stopped me. Said he, "Mr. Root,



will you please tell me where you found that passage in the Bible you just read in the shoe-shop adjoining? Perhaps you did not know it, but there is only a half-inch partition, that was put up temporarily, that separates our two rooms, and several of us in here heard you reading, and heard your prayer."

I had to laugh when I told him that I did not have any Bible at all. Then I added, "What you heard me read was on a little scrap of paper that I found on the floor among the scraps of leather. I do not know where it is in the Bible; but when I get home I will hunt it up."

The above is something of a confession to make, I am aware, but it was true. When a child in the Sunday-school I went over those same verses, and I knew pretty well that they were somewhere in the New Testament. I pulled the scrap of paper out of my pocket and suggested that I had better go into the drugstore and read it over again to the little crowd gathered there. By the way, friends, I shouldn't wonder if there were a good many *shoe-shops* and *stores*—yes, and *drug-stores* too—where they need the latter part of that message in the sixth chapter of Luke. I went into the drugstore and read the words over again, and talked to the little crowd there as well as I could, for he, like the rest of them, was beginning to see the *light* shining through the beautiful words from that precious book. I think I went and told my good pastor, the Rev. A. T. Reed, about my adventure of the morning. He said, as soon as I showed him the scrap of paper, that it came from the sixth chapter of Luke.

I am now coming to the point of my story—a point that I never realized till this morning, when I read the two verses of our opening text. The druggist, Mr. B., in that drugstore, said something like this. I hope he has not forgotten it, and that he will be able and willing to reiterate with emphasis the words he spoke so many years ago. This is what he said:

"Mr. Root, I am no church-member, and I have not always stood up for the Bible, perhaps, as I ought to have done; but I want to say right here that if all the Bible were lost and destroyed except the few words you have just read to us, it is sufficient of itself to save the world if the world would take hold of it and follow it."

Now for the second verse of our text. The first one, I have been familiar with for years. I have heard it read over and over; and yet it never struck me before as it did this morning when I read it at our family worship. With our great business there are at present many perplexities. Some of them the boys keep away from me because they think it might worry me needlessly. But I beg them to let me take hold of any matter whenever I can be of service. As I read the verse I remembered the many troubles that beset us—our insurance, for instance. Just now we are making great changes in order to reduce the insurance. Our factory has been almost torn to pieces—that is, the inside work has been taken out during the past few

weeks, and there are constant problems coming up as to how to avoid loss and waste. Sometimes the work has been done wrong and has to be torn down and done over. But all these things are trifling compared to some other matters that concern the great outside world—the divorce problem, for instance. When we hear that some near friends are about to break up their family because husband and wife can not agree, it is a far more serious thing than the loss of property. What shall we do in all these things? Just how far are we responsible for the acts of our neighbors? Right here comes in that glorious text, "Fear thou not, for I am with thee." What an uplift just the sight of that passage gives one! The present crusade for temperance awakens lots of animosity and bitterness. Persecution and death come. Not only ministers but officers of the law and business men have been shot down because they had the courage to fight the speak-easies. But this verse tells us, "Be not dismayed, for I am thy God." There are circumstances where it is right and proper for us to risk our lives for the good of humanity. If we die in a good cause it will be a glorious death, and may, perhaps, bring about a greater reform just now than we could have accomplished by living. "I will strengthen thee; yea, I will help thee; yea, I will uphold thee with the right hand of my righteousness." I told you how a few words from that old Bible silenced all argument and brought us all on our knees in humble agreement and in obedience to God's law. Just now it occurs to me that that druggist said, also, that the words I had read have the stamp of *heaven* on them—that they had the impress that they were from heaven and not of earth; and then that other precious verse—I must confess that, as much as I had read the Bible I did not know till to-day that there was any passage in it where it says plainly that the great Creator of the universe will take us by the "right hand" and lead us in the straight and narrow path. I have told you how lonesome I sometimes feel when I am in a great city; and oh what a change comes over *every thing* when I get hold of the hand of a bee-keeper or one who reads GLEANINGS! When I tell him what I came to the great city for, and what I want to see, he usually turns around with a bright smile, grasps me by the hand or takes hold of my arm, and says, "Well, we will *see* if we can not find some greenhouses to show you." What a pleasure it is to have a *guide*—a guide who knows you, and who is interested in your welfare! Well, that last text promises—yes, it is a *fair* and *square* promise—there is no *question* about "inspiration" right here; it is God's own word. The old prophet Isaiah made no mistake when he told the Jewish people what God would do for them if they were *only* obedient. "Fear not, and I will help thee." What wonderful words are these! who spoke them? Who is it that promises such help? It is God, the creator of all things.

When I said a short time back that, so far

as I was able to learn, infidelity and skepticism have gone out of fashion, I had a very few reminders that I was mistaken. Some of them were bitter and hard, but there were only a few. They wanted me to reconcile some of the difficulties they claimed to find in the Bible. I had to tell them that I could not do it. I reminded them, however, that the recent revision of the Bible had explained many of these apparent difficulties, and had made some things clear that had been stumbling-blocks. I judge from the past that the future will probably throw more light on these difficult passages.

Now, I want to say to all those whose eyes rest on these pages that the two texts I have quoted have the stamp and impress on them of being *divine*. As that druggist said years ago, they have the stamp of *heaven* on them. They are something *more* than human.

One thing we can understand clearly and plainly: We are *in* the world and *of* the world. Somebody sent us here and gave us a human life to live, and with a purpose. Another thing is clear and plain: We are all going *out of* the world—some of us older ones very soon. There is no escaping the fact. Now, what is there to tell us, in all of the literature of this whole earth, any thing of the past, before we came on the stage, and any thing of the future? Nothing but the Bible. No human being ever took it on himself to assume the awful responsibility of the words of our text—"fear not." These words are from God, the creator of all things, and not from man. It reminds me vividly of the words of our Savior when he said, "Come unto me, all ye that labor and are heavy laden, and I will give you rest. Take my yoke upon you and learn of me, for I am meek and lowly of heart, and ye shall find rest unto your souls." What human being who ever lived since time began has had the right and authority to utter such words? None but Christ, the lowly Nazarene, the Savior of the world. These words I have quoted are truth, for I have proved them, and every child of humanity who goes to them *will* find them true.

Your body is the temple of the Holy Ghost.—II. COR. 6: 19.

The letter below was sent me as a kind and encouraging word soon after the publication of *Our Homes* for October 1. But I was a good deal disappointed to find at the end of it, "Not for publication." But the letter seemed to me so good and helpful, at least in the present crisis of our nation's history, that I begged Dr. Moody to withdraw his request, which he has done, and I now take pleasure in presenting it to the readers of *GLEANINGS*.

*Dear Mr. Root:*—I take the liberty to express my most hearty approval of your words concerning the unrealized extent of the terrible injury inflicted upon our whole country by the so-called social evil. But you are wrong in thinking that men become infected because of a reckless disregard for the welfare of future wives and children. Ignorance, curiosity, and misdirected imagination lead them to surrender to temptation. They do not even know the awful possibilities that lurk behind the indulgence of the present moment, the dwarfed and sickly children, the doom of

invalidism, and suffering for the future wife. Nothing taught in colleges is as vitally important as the knowledge of their danger, yet it is left for the vilest young students to poison innocent minds with false information, and lead them along the paths of prurency.

Boys and girls, before the age of puberty, should have sound and thorough instruction concerning the paths of life and the noblest function with which God has endowed the body. Their teachers should be of their own sex, and specialists in imparting the instruction in a modest and impressive way. But what an outcry would such an effort cause if it were made in any institution of learning supported by the State!

Several years ago I was invited to address the students of all departments in a well-known Southern university, and received a hint that some words of warning and information along these lines were expected. When I looked in the faces of those earnest boys and young men I remembered the helpless ignorance of my own youthful days, and pitied them. I tried to teach the plain truth in modest language—to instill a sense of reverence for such a study, instead of levity, and a horror for the desecration so common. I pictured the degradation, filth, and loathesome, incurable diseases that are masked under the attractions of painted, silk-clad, pitiful women. I told them of the future horrors waiting for them and their wives and children. The hall was full, and the attention perfect. I was afterward told that it was the students and not the authorities who had desired me to select that subject, and that the chaplain and some of the faculty denounced such a lecture to such young men and boys. I tried to comfort myself with reflections of duty done, but it was cold comfort. Two years later I received a letter written at the same institution, and by a student who had heard the lecture and was still there. He thanked me for himself and many other students for "opening their eyes" and saving them from "fatal mistakes." With others he had joined some kind of purity league which had passed a resolution directing him to write the letter. Then I was comforted. Every year now brings me the opportunity to tell large numbers of young men the whole truth, and warn them, as an older friend, against surrounding temptations. I believe that my Creator has laid out this work to my hand, conjointly with the privilege of teaching the principles of my profession, and I hope to die in the harness. It is easy to see why your work is blest. It is always for good. God speed the work.

H. A. MOODY, M. D.,

Professor of Therapeutics,

Medical Department University of Alabama.  
Mobile, Ala., Oct. 4.

#### DR. MILLER TRIUMPHS AMID TRIBULATION.

Our good friend Dr. C. C. Miller, it seems, has been having what the world would call a "streak of bad luck." When Ernest first heard of it he wrote to Dr. Miller a letter expressing his sympathy, and below seems to be a response to that letter. Our readers do not need to be told in detail about the various happenings. The doctor's reply apparently suggests.

Yes, all those "dire things" enumerated by you have pretty much come to pass. We've treated forty-seven colonies for foul brood, and broken up a number. The principal ambition of the bees seems to be robbing.

Thanks for your sympathy, and yet I don't want to make too heavy a draft on it—others may need it more. I've just as much to eat as ever, and just as many teeth for thorough chewing. I've more clothes than I need to keep me warm—at the present moment it's 97° in the shade, and my dress is down to the minimum; and although foul brood and an utter crop failure don't make the prettiest combination, yet I'm having quite a bit of fun in fighting the disease; and when I'm done I'll know something more than when I began. I don't believe European foul brood is nearly as bad as you supposed, but I can tell for certain a few months later. As to depreciation of stock, it's more than made up by appreciation of other stock. Then there's still left Sunday-schools and flowers and prohibition and—oh! lots of things to make life worth living. Still, I think I'd be just a little happier if you'd come and play with me. Yours warmly.

Marengo, Ill., July 28.

C. C. MILLER.



We all had a big laugh at what he says about having just as much to eat as ever, and just as many teeth to chew it, referring, I suppose, to T. B. Terry and Fletcherism; and the wind-up about the Sunday-schools, flowers, and last, but not least, "prohibition," ought to remind us all that now *is* the time to rejoice.

## POULTRY DEPARTMENT

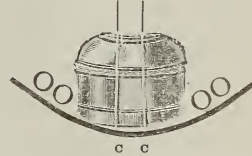
By A. I. ROOT.

MOISTURE, "FIRELESS," ALTERNATELY  
"HEATED AND COOLED," ETC.

Oh dear me! how often we are reminded that there is "nothing new under the sun!" I thought I was original in the use of sponges for imparting moisture to the inside of an incubator; but Mr. Pritchard, who has charge of our basswood apiary, informs me that more than ten years ago Mr. Wm. Stahl sent out with his Excelsior incubator a lot of little sponges to be moistened and laid on top of the eggs; so it was not my discovery after all. Furthermore, that beautiful little book, "Profits in Poultry," that we have been giving away for a year or two (to everybody who sends a dollar for GLEANINGS, and six cents for postage) and which was printed in 1898, tells about sponges, and says that by putting a few of them in with the eggs we can tell by the rapidity with which they dry out whether the egg-chamber is too dry. This I had already discovered. During a very dry time the sponges will dry out between morning and night; but when it is rainy or damp they will hold moisture more or less for three or four days. This same book *also* recommends turning the eggs every eight hours, although I did not know it when I struck on it. It describes an incubator run with hot water. You draw off a gallon of water and put in another gallon that is hot, once in eight hours, say at 6 A.M. and 2 and 10 P.M. That this ("lampless" incubator) is practicable has been abundantly proven (we are told by the book) by the fact that a large poultry establishment has been run successfully for many years on this plan.

We have fireless cook-stoves and fireless brooders; and when I visited Philo he was thinking of and *talking* about a fireless incubator. This poultry book that has been on the market so long, and that we have been giving to GLEANINGS readers (if they would simply pay the postage), has been describing all along a "fireless" incubator. When our agricultural papers and all other home papers have been giving us many directions for making fireless cookers, and many testimonials to their value, it is a little funny that nobody suggested that these same fireless cookers would hatch eggs nicely if there were only some arrangement for keeping up

the heat, and also affording plenty of ventilation. The insulating arrangement to retain the heat is just what is needed for an incubator. At the present writing no one has as yet robbed me of my "laurels" by letting me know that I am not entirely original in my great discovery (?) of moving eggs away from the heat and moving them back again at periods of about eight hours each. If any manufacturer of incubators or anybody else (besides sitting hens) has discovered or suggested that eggs hatch better by being alternately heated and cooled I should like to know about it. Now, here is my *latest* discovery:



"A HOME-MADE" INCUBATOR.

One of our printers hastily made up the cut above to illustrate my invention. The wooden bowl shown above is rather too shallow, and the eggs, as you will notice, are further away from the kettle than they are in actual practice. The white lines running up through the kettle indicate the chimney when you have a lamp to keep up the required heat. C C shows where the bowl is to be cut away when a lamp is used.

You can make an incubator in your own home this very day (or this very hour, almost, if you choose), that will hatch chickens and brood them, and do the whole thing nicely. Get your wife's chopping-bowl (such as she uses for making "hash") or any other wooden bowl. Then heat some water in a tea-kettle up to about 120 degrees. You ought to have a thermometer of some kind; but I think you can get along very well without one if you do not have one handy. Have the water in the kettle just as hot as you can bear your hand in. You ought to have your hand quite warm before you try it. Set this kettle of hot water inside of the wooden bowl. Now put your eggs around the bottom of the outside of the kettle resting on the wooden bowl. The sloping sides of the bowl will cause the eggs to roll up against and "hug" the kettle. After you finish one row, then lay another outside of the first, breaking joints. That will make 15 or 20 more, or 30 to 40 eggs in all; but if you have a good-sized kettle, and a room or cellar that can be kept pretty close to 70 degrees, you can put on still another row of eggs just above the row that rests against the kettle. If the kettle is a little sloping, the eggs in this upper row will rest also against the kettle.

Chickens can be hatched with the eggs resting directly against the hot kettle; but my best hatches have been made with a band of cotton flannel slipped over the kettle so the eggs will rest against the soft cloth instead of the hard metal.

Now cover tea-kettle, eggs, and all with another similar wooden bowl. To retain the heat, set the apparatus on a big soft cushion of some kind, and another light thin cushion can be laid over the top. Well, this

whole arrangement makes a pretty good fireless cooker, a tip-top *incubator*, and a *splendid* brooder. In order to keep the temperature, say, not lower than 106 to 108, and not higher than 114 to 115, you will need to dip out some of the water when it gets too cold, and pour in some hot water to warm it up. A little experimenting will tell you how much and how *hot* the water needs to be. As nearly as I can make out, the water should be kept as close 111 or 112 as possible. My best hatches have been at this temperature. If you wish to be spared the trouble of having hot water every 8 hours in readiness, make a hole through the bottom of your wooden bowl, and put a lamp under it. It will be better *economy* of heat to have a tea-kettle made with a tube soldered in the bottom, running up through the opening where the cover goes on. This tube will form a sort of lamp-chimney. Of course, this chimney must go up through the upper wooden bowl. With this latter arrangement a very small lamp with a narrow wick and a little flame will keep up the temperature of your kettle of water. You will need a little damper in the top of your chimney. This is to be shut up as nearly as you can, without making the lamp smoke.

On page 448 of our issue for July 15 there is a brooder described warmed by a jug of water, said jug kept warm by means of a lamp. Now, this jug may take the place of a tea-kettle by cutting a hole through the wooden bowl large enough to hold the jug, replacing it with a piece of galvanized iron. That a jug of water will hatch chickens was proved some years ago by one of the women teachers (now Mrs. Sarah Pritchard) in our Medina schools. I asked her a few days ago in regard to the particulars. She said she replenished the jug with hot water only twice a day. The eggs were placed around the outside of the jug, they being supported up against the jug by woollen cloths. If I am correct, she did not use any thermometer. She simply kept the jug warm enough so that the eggs, when taken in her hand, felt about as warm as eggs are under a sitting hen; and I have about decided of late that I can tell by feeling of eggs when they are warm enough, almost as well as if I used a thermometer; in fact, I am told this is the way they do in China, where they hatch chickens almost by the millions, with no thermometer at all. To do this you must be sure that your hands are at a normal temperature at the time; for if you should come in from outdoors with cold fingers it would not only be bad for your eggs, but you would not be in condition to judge of the temperature.

Some of you may wonder why I selected any thing so awkward and ungainly as a wooden bowl. Well, it is because my experiments during the past summer have seemed to indicate that wood is much better than metal to be under the eggs. Something thinner than a wooden bowl, say a shelf made of wood veneer, would be desirable; but I have not been able to make the wood

veneer or strawboard keep its place. The wooden bowls are not expensive, and I think they can be made considerably thinner than those in the market if made for this particular purpose. It is a very good idea to have the *bottom* bowl thick and heavy in order to retain the heat. This form of incubator, by its shape, economizes heat so well that a very small amount of oil is needed to run it and keep up the proper temperature. In fact, you want about the smallest size of burner made, for this purpose. If you use a large burner, when you turn the flame down to where it is required, when the eggs are near hatching, the flame is liable to go out.

There has been objection made to the amount of work necessary to turn the eggs or swap places every eight hours. With the wooden bowl and tea-kettle I have described, you have only to pick up the egg in contact with the hot kettle, and the one back of it will roll into its place; then just drop the egg in your fingers so as to occupy the place of the one that rolled in. You can swap 40 or 50 eggs in this way almost as quickly as you can turn by hand the eggs in any incubator in the market. When the chickens commence hatching out I take the shells out of their way, and see that each chick gets up against the kettle until it is dried off. You will soon want a little fence made of a circle of rolled-up pasteboard, to keep the chicks from climbing out and going all over the room; and, by the way, this arrangement is the very best brooder I know of, either indoors or outdoors. If you put it outdoors in cool weather, of course you will have to have it inside of a little house.

You can adjust the flame of the lamp very nicely by looking down the chimney. Now, if we have a thermostat attached we should have a complete incubator; but after trying both ways, with a thermostat and without, I made up my mind that it was but little more trouble to regulate the heat by turning the lamp up or down than to use the thermostat; and I have just been delighted to find that this cheap book I have been mentioning, "Profits in Poultry," states that the hot-water incubator described there is being run successfully without any thermostat at all. You can test this home-made incubator in winter, when you have but little to do, so as to be ready to go to work successfully when spring opens once more. Do not forget to use the cheap egg-tester I have described. You can tell in five or six days, if you have sunshiny weather, whether your eggs are going to hatch; and if your apparatus does not work your eggs are just as good to use for cooking as if they had been anywhere else for that length of time in hot summer weather.

If you want to enlarge the capacity of your "tea-kettle incubator," get a second wooden bowl and cut out the center so it will just fit over the tea-kettle and rest a sufficient distance above the lower shelf to permit you to swap the eggs below. The tea-kettle spout will probably be in your way unless you cut out the bowl so as to go around it. Of course



you can have the spout removed and the opening closed up. But you may decide it will be better to have a kettle or tank made at the tin-shop on purpose. If the tank or kettle is made slightly sloping you can have three or more of these wooden bowls, each bowl forming a shelf to support the eggs.

If you have a second or third shelf, of course something will be required to close up the openings between the bottom shelf and the top one. You can use for this a cloth-covered tube made as follows: Get a piece of heavy galvanized wire cloth, say of  $\frac{1}{4}$ -inch mesh—the kind that is galvanized after the netting is made. Have this piece just long enough to reach clear around the wooden bowls, and wide enough to go between the top and bottom wooden bowls. Now cover it on both sides with cotton flannel. In order to protect the rough edges of the wire cloth, sew a folded tape clear around the edges on all sides. Now roll this up so as to make a hollow tube that will just slip over our "wooden-bowl incubator." Of course, the width should be just the distance from the lower bowl to the edge of the top one that forms the cover. Have some little brass hooks sewed on the edges so as to hook up the cover when in place. The two thicknesses of flannel will confine the heat, but yet allow sufficient ventilation for the eggs. It is on the principle of the cloth curtain for poultry-houses, as you may remember.

No sponges, wet sand, nor any thing else is needed to insure a moist atmosphere with this arrangement; for the tea-kettle with the cover off will be giving off vapor more or less all the time. If there seems to be too much moisture, narrow the opening of the kettle down to a very small orifice. At the present writing I have not determined whether this open boiler affords too much moisture or not; but if it does, it can be remedied with very little trouble. I expect to give you a picture of my home-made incubator in our next issue.

The principal objection that has been made to my invention is the time occupied (three times each day) in swapping the eggs; but if you look into the matter a little you may decide (as I have) that this incubator does not take more time or skill than the best incubators on the market. I have just written the Cyphers Co. (and they are probably the most extensive manufacturers of incubators in the world), and they have given me their latest instructions in regard to operating their incubators. You may remember I have a Cyphers incubator which I expect to use this winter in my Florida home. Well, below are their instructions in regard to turning and cooling, clear up to the present date:

The method for operating as used on the Cyphers Company's farm may help you. We run the temperature at about 103 degrees up until hatching time, then increase to 104 and 105. Commence turning the eggs on the second day, turning night and morning. Commence cooling the eggs on the fourth day by removing the eggs from the machine and allowing them to remain out until they feel cold when placed to the eyelid. Turn and cool each day up until the eighteenth

day; then close the machine and leave closed until the hatch is completed. CYPHERS INCUBATOR CO.  
Buffalo, N. Y., Oct. 16.

Now please notice in the above that the egg-tray or trays are to be removed from the machine. If it is hot weather it may take fully half an hour for the eggs to cool off as described above. Please consider that you must not go far away from the eggs, and you must keep it on your mind. I do not know how many have told me that they had forgotten to put the eggs back, and left them till the afternoon, or pretty nearly all day, and I have done the same thing myself. If you go to work at something else, like myself, you will be pretty sure to forget all about the incubator. Now, with my discoveries you finish up your incubator and go away and leave it for eight hours, and it takes you only a very few minutes to do all that needs to be done.

#### BUTTERCUP CHICKS HATCHED IN THE FALL; CROSSING DIFFERENT BREEDS, ETC.

Mr. Root:—I note what you say about the Buttercups. I noticed that advertisement in the *Rural* myself, and wondered why it was allowed there. Candidly, I can not believe it is so. The "200 hen" is yet too uncommon to take much stock in the 300 one, even if it were only an individual hen; but when such claims are made, not for an individual, but for a whole breed, I simply do not believe it. At the same time, I do not think the test you are making is a fair one to the Buttercups or any other breed. In August the hens are usually not in good condition to produce eggs that will hatch good chicks, nor is the season a good one to try to raise little chicks; so for these reasons I am sorry that your test was not made in the spring, when nature would be more willing or able to help you along. My experience with summer chicks, both in New York and California, is that they never equal the chick hatched in the normal breeding season. Speaking for myself, I would not give two cents each for chicks hatched now.

Getting back to the laying qualities of hens, the Rev. Edgar Warren, of New Hampshire, author of "Two Hundred Eggs per Hen," says that he has developed his phenomenal laying White Wyandottes by an infusion of 12½ per cent of White Leghorn blood, using the Rose Comb White Leghorn. He says this is a most valuable discovery, but he gives it free—no secrets. See also the article about cross-bred poultry in the *Rural* of last week. My own experience is the same. I used pure-bred Black Minorcas with pure-bred Black Langshans, and had a most handsome fowl as well as a phenomenal layer. I also used a Houdan cockerel with a high-grade Plymouth Rock, and again produced a fine layer, also one of good size. The result in the Houdan cross was quite curious. Every male in the lot showed Plymouth Rock barring, and little if any of the Houdan crest, while every one of the pullets was jet black, with quite a nice crest, and most of them had five toes, from their Houdan father. I am firmly convinced that the first cross of two pure-bred breeds of poultry of similar color will prove better layers, and be much more hardy, than either of the parents.

I hope you will get something good for your four dollars, and shall watch the result, but shall not be at all disappointed if they fail to mature well or show lack of stamina; and I am quite positive that the 300-egg hen, as a breed, is yet to be created, and that the individual is as rare as (to use a small boy's expression) a Chinaman with whiskers.

South Berkeley, Cal., Sept. 23. W. H. PEARSON.

Friend P., I too have objected to that expression, "a 300-egg hen." I do not believe there is such a hen on earth, and very much doubt if there ever will be; and I do not think that that advertisement was intended to convey the idea that the Buttercups would lay 300 eggs in a year. It was a kind of extravagant expression that is altogether too common among poultry advertisers. From

my limited experience I can hardly agree with you about fall chickens, especially those that are hatched in December down in Florida. I think that down there they consider December one of the very best months in the year to start an incubator; and yet I do not see why Florida should be very much different from California. I am aware that crosses will frequently lay more eggs than either strain kept pure; but where shall we "be at," if we all go into this sort of business? The average farmer has "crosses" enough already, and, I think, often to his detriment. I expect to keep my Buttercups and White Leghorns in separate yards; and if Buttercups do not do any better in Florida than the White Leghorns side by side they will be promptly reported.

#### THE "BUTTERCUPS" UP TO DATE.

They are now (Oct. 23) about four weeks old. They look to me more like quails or partridges than chickens; in fact, they so much resemble the partridges up in my woods in Northern Michigan that I am prejudiced in their favor on that account. They feather out rather ahead of the White Leghorns of the same age, and I think they get around a little more lively also, even though the Leghorns are celebrated for their agility. Their wings are longer than those of the Leghorns, and they fly like a hawk. This is all I can say for them at present. I had quite a little correspondence with Mrs. Dumaresq, and she admits she never yet had fully 300 eggs in a year; but they did have a hen that went up to 290. She also says it may have been a mistake about a pullet laying when three and a half months old. Their circular was printed last December. Her husband died in January; and she says he said shortly before he died that there was a mistake in that Buttercup circular that would have to be corrected. She thinks he alluded to this matter about a pullet laying so early, and that it should have been *four* and a half months. This would not be remarkable, for I have a Brown Leghorn now that laid at the age of four and a half months. I propose to take the Buttercups to Florida, and will keep you posted further in regard to them.

#### GETTING A START IN THE POULTRY BUSINESS.

What is your opinion as to the best way to get a start? Would you advise buying a pair, trio, or pen of good stock of some of the breeders that are advertising so-called bargains now, or wait until spring and buy mature stock then? Or would it be better and cheaper to buy 50 or 100 day-old chicks in the breeding season? Do you think it possible to get good stock from chicks of this kind?

I have a few mongrel hens. Would you advise buying eggs and starting that way? I should also like to know if, in your opinion, hens will lay as well or any better if confined at all times in Philo winter colony coops than those having range. R. L. BUNDY.

Mason, Ohio, Oct. 14.

My good friend, without knowing more about your circumstances, finances, etc., if I were you I would stick to your mongrels. Use them to practice on, and get right at it. But have a good male. I paid \$5.00 for a young cockerel; and with the one good male I would have about three full-blooded pul-

lets; but if your three pullets do not lay eggs sufficiently different from your mongrels, I would have some way of marking them; then as soon as a hen wants to sit I would give her some eggs and then set to work to learn how to hatch chickens (even in winter) and not let them die. You can do it if you go about it. If you do not have as many chickens as you want in the spring, from your three full-blood hens and mongrels, also buy some baby chicks. I succeeded in getting some excellent fowls from some I purchased in April at only 7 cts. each. By no means think of keeping your chickens confined unless you are in a town where you are *obliged* to keep them shut up. I think Philo recommends giving fowls more or less range as circumstances permit. If you are obliged to keep a large number on a small piece of ground, as Philo is, of course you will have to shut them up. I know that there are some who claim that hens lay better when confined than when they have free range; but if they do, the time required to care for them is much greater, and I believe it is also rather the exception than the rule.

#### THE "CHICKEN-HOUSE" THAT PRODUCED THE EGGS.

Dear Mr. Root:—Perhaps you will be interested in the enclosed picture of a hen-house that cost only one dollar. This was made in the first place for a brooder-house; but when we tore down our hen-house, with the intention of building another in a different location, we put roosts in this and put the hens in it, as we thought, temporarily. They did so well, however, that we have left them there permanently, and have no intention of returning to the old idea of large houses.



A POULTRY-HOUSE FOR 18 LAYING HENS, THAT COST ONLY A DOLLAR.

Our hens remained in this all last winter, and laid right along, with the exception of about one week during a bad spell when we thought that we would be good to them and let them stay in the barn. They at once stopped laying, and we sent them back to the coop again, and soon they were laying as well as ever. This coop is made of matched lumber procured in the shape of boxes at the clothing-store, and is about six feet long by three feet wide, and three feet high in front. The roof is covered with ruberoid, or something of that nature, and was a remnant left from covering some other building. The total cost of the building was not more than a dollar. We keep about a dozen and a half of our White Wyandottes in this small house, winter and summer, and the result in eggs is



altogether satisfactory. Of course, they have the run of the barn to scratch in during the day in winter as well as summer. We make it a rule to move it every day or two, and that is much easier and cleaner than the bother of cleaning out an ordinary hen-house. Of course, when the ground is covered with snow we can not do that; but such times are infrequent for many days at a time in this locality. The door should be covered with a canvas curtain to keep out the wind in cold weather. I believe that the inexpensive utilities are best in poultry culture. I get good results in eggs, but have never been very successful in raising small chickens.

FRANK C. PELLETT.

Atlantic, Iowa, Sept. 21.

The above report not only indicates that a cheap house may give as good results as a high-priced one, but may do even better. It may be the hens stopped laying because they were taken away from the place where they had been raised; but it may be also true that the cheap house gave them ventilation more to their notion. Please notice the dimensions of this house are exactly the same as the one Philo recommends. Now all that is necessary to have a successful egg-farm is to cover the farm with just such houses placed at proper distances apart.

#### THE "WHITE PLAGUE" OF THE "CHICKEN BUSINESS."

In your July 1st issue you have an article on the dreaded "white plague" in our young chickens. Many years ago I used to be troubled a great deal with it, and lost many little chickens by this intestinal trouble. I tried almost everything I could think of or hear of; but none did the work I expected of them. Finally, almost in despair I thought of lime water. Knowing our doctors give it to human beings for stomach troubles I thought to fix up some of it. I put a chunk as large as my fist into a two-gallon jar, and covered it with hot water. When it had thoroughly slaked I filled the jar with water that had been boiled, and then diluted it a half with boiled water and gave it. That stopped (almost) the whole entire trouble. Then I did just what you say our friend Kellerstrass did in his yards. I tore out half of the floors in those small coops, 3x6 ft., and gave them fresh sods once a week. That seemed to remedy the whole trouble completely. I never have had any white plague when we have supplied our coops with these two items. I never tried sods alone. My success is such that we rarely lose a chick if it is strong and all right when hatched.

Lodi, Wis., July 10.

J. M. PRUYN.

## HIGH-PRESSURE GARDENING

By A. I. Root

#### SWEET CLOVER AS AN INOCULATOR FOR THE INTRODUCTION OF ALFALFA.

The following, from a late issue of the *Farm and Fireside*, strikes so many important points that we take pleasure in giving it a place here. Please notice, "Sweet clover does not depend on artificial inoculation." Again, "Sweet clover yields as much forage, if not more, than alfalfa." Several have written, asking about the value of sweet clover for hogs. This writer says they get so fond of it that they even dig up the roots and thus kill it off. Last, but not least, there is no trouble in regard to bloating from sweet clover. Of course, the article was written for the latitude of Kentucky.

I am so well pleased with experimenting with sweet clover as a soil-restorer and a forage for live stock that I will endeavor to give a few points on its management.

Sweet clover belongs to the family of leguminous

plants. The same bacteria live on its roots that live on the roots of the alfalfa-plant. Some people will say, "If alfalfa is so much better than sweet clover why not plant it?" How do they know if they have never tried it?

I first used sweet clover as an inoculator for alfalfa. The bacteria developed much more rapidly in the soil sown to sweet clover than in that sown to alfalfa. The plant of sweet clover does not depend on artificial inoculation or fertilization as does the alfalfa-plant.

Another advantage is that the seedling does not have to be done so early. The seed of alfalfa should be sown from the fifteenth of August to the first of September, if best results are expected. The seedling of sweet clover should be done about the first of October. Four to six weeks are gained for the maturing of crops growing on the land to be sown to sweet clover, which may be corn, tobacco, tomatoes, or other farm and garden crops, while the land to be sown to alfalfa should be broken and thoroughly cultivated before seeding, which requires about four weeks.

The sweet clover yields as much forage as alfalfa if not more. From analysis, the sweet clover contains the following composition:

Water, 6.86 per cent; protein, 22.55 per cent; crude fiber, 23.49 per cent; carbohydrate, 32.61 per cent; fat, 3.91 per cent; ash, 10.05 per cent, making its feeding value as a forage crop high. Its value as a fertilizing agent in gathering nitrogen can hardly be realized. It has the ability to thrive splendidly on the poorest sandy soil, and on dry and badly washed hillsides where the other clover would never start.

The seed of sweet clover should be sown thin on old worn fields, then the stalks will be large and heavily branched, producing a great amount of seed. About the first of September the stalks should be cut and placed in the ruts and washes. Then the seed will be scattered sufficiently to set a heavy sod, and will produce a fine pasture the next season. The second or third year after sowing, blue grass will take in this locality and soon be a solid set.

A description of the sweet-clover roots will show that they are a high-class fertilizer. Unlike other legumes, the roots are somewhat fleshy and not fibrous. During the first year these roots reach far into the ground and draw up from considerable depth an abundance of plant food which they store up for the second year's growth. On the death of the plant, at the close of the second year, the fleshy roots decay more rapidly than fibrous roots, and their nitrogen becomes more quickly available for other crops.

My experiments cover the use of the following crops after sweet clover: beets, beans, onions, parsnips, cauliflower, celery, melons, raspberries, and strawberries. All show a marked advantage on the part where sweet clover was turned under after a growth of two seasons. The color and size of plants, as well as the amount and quality of fruit, were noticeable.

#### PREPARES LAND FOR ALFALFA.

I think sweet clover is one of the finest things in use to prepare land for alfalfa. Sow to sweet clover for one year; break the land, turning under the young growth the second spring about the first of June, and cultivate until ready to seed to alfalfa. The germs of bacteria will increase rapidly, and the soil will be filled so full that the alfalfa-plants will grow right off and make two or more good crops the first season after sowing in the early fall.

As a soiling crop it is right up to the front. Combined with blue grass it makes one of the finest pastures known to stockmen. Unlike alfalfa, it improves by being pastured; yet again, like alfalfa, the stock have to become accustomed to it before they will eat it with a relish. But when once they have learned to eat it they prefer it to all other grasses.

As a pasture for hogs, the chief difficulty lies in the fact that the hogs want the roots as well as the tops. They eat the grass readily from the first, seeming to like its peculiar flavor, and are also fond of the hay, eating it more readily than that of red clover.

Another one of its many good qualities is that cattle may be fed exclusively on sweet clover, and under the conditions most favorable to bloating, without any danger from this trouble. Coumarin, one of its constituents, the principle which gives it its bitter taste, effectually prevents the fermentation that results in bloating.

J. W. GRIFFIN.

Kentucky.

#### SWEET CLOVER—STILL MORE ABOUT IT.

The report below comes from a man who purchased his seed of us. It seems a little funny that we should keep getting such re-

ports while the editors of some of our agricultural papers are still talking about sweet clover as a "noxious weed."

I consider that sweet clover is one of the best plants or clover known. It is worth \$10.00 per acre as a fertilizer alone. I sowed three or four acres last spring on wheat ground; and when I cut the wheat it was about a foot high; and when I turned the stock in the field (horses, cattle, sheep, and hogs) they all ate that before they touched the red clover, and now they eat it close to the ground. There was a decided increase in the flow of milk. It can not be beat for pasture, and it yields the finest honey. L. A. LAWMASTER.

Upper Sandusky, O., Oct. 8.

THE WONDERBERRY; WHAT A RAILWAY POSTAL CLERK SAYS THE PEOPLE OF OKLAHOMA THINK OF IT.

Dear Mr. Root:—I was greatly surprised to see in a recent issue of GLEANINGS the position you took in regard to the wonderberry, wilderberry, garden huckleberry, or whatever you choose to call it. I am writing you, not with the intention of changing your opinion or criticising you, but simply to show the difference of opinion that may exist upon even so small a matter.

I presume it is the general opinion among people of the Eastern States who have not paid us a visit "out west" that we are pretty hard run out here for fruit or almost any other of the good things; but I want to tell you, Mr. Root, that there are many of us who are not starved for fruit till we can eat those things and call them good. It surprises me that one who has been such a leader in the production of comb honey, and must have partaken of the most delicious fruits of the earth, can find any thing good in the wonderberry. Several years ago I saw the garden huckleberry advertised by Miss Mary Martin. Upon writing her for prices she sent me a package of seed gratis, from which I raised a large number of plants. It certainly is a wonderful plant, and filled nearly every claim until it came to the table, where it failed completely with myself and neighbors. We tried them hot and tried them cold; tried them cooked, and then cooked some more; tried them sweet and tried them sour; tried them preserved and tried them in pies; tried them before frost and tried them after; but in every instance they failed to tickle our palate.

Some months ago some one wrote our *Oklahoma Farm Journal*, asking about these berries. The editor advised him to stand by the old tried and true fruits, a large list of which succeed wonderfully here, and received a good scoring from some one who was pleased with the taste of the wonderberry. The editor simply closed the matter by remarking that "there is no accounting for the tastes of some people."

N. FRED GARDINER,  
Railway Postal Clerk.

Geary, Okla., Oct. 18.

## KIND WORDS.

Dear Mr. Root:—It is with much pleasure and often profit that I peruse *Our Homes* the first thing after it comes into the house; and the various letters of approbation and criticism are interesting, so perhaps it may not be amiss for me to give a little expression.

I am quite of the opinion that Solomon fell from the good estate he once enjoyed; and we are told that by their fruits we are to know them. Surely none would hold up his example to the rising generation.

I wish your temperance papers might go into every home; that the spirit of them might reach from pole to pole, and from the river's mouth to the ends of the earth. One grand step would be taken if all young women, this fair land over, would make a stand and not accept the attentions of any young man who "just takes a little and sees no harm in it." Surely intemperance is the greatest curse of the land.

I have noticed in several papers that the Bible is spoken of as the "Word of God." Now, in all sincerity I ask how this can be, for we read (II. Tim. 3:16), "All scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness, that the man of God may be perfect, thoroughly furnished unto all good works." They are, then, but a declaration of the fountain and not the fountain itself. They contain a history of God's people in divers ages—a prophetic account of many things and events, and a full account of all the chief principles of the doctrine of Christ; for the prophecies came not in old time by the will of man, but holy men of God spake as they were moved by the Holy Ghost. Therefore are the words of God spoken

and written by holy men of old, anointed of God for the work, but they are not God the Word nor the Word of God, for that was in the beginning with God, and was God—John 1:1. It was before the scriptures were, and was, in the fullness of time, made flesh and dwelt among us. How can we, therefore, put them above their place by calling them the "Word of God"? And, again, we read in Romans (10:8), "The word is nigh thee, even in thy mouth and heart." Now, this "word" is certainly not the Bible, for how could it be in the mouth or heart?

With these few observations on the subject I close, wishing that much good may come from *Our Homes*. Centerville, R. I., Sept. 28. M. C. FOSTER.

Our stenographer, W. P. Root, submits the following in regard to the above letter:

The foregoing remarks relative to calling the Bible the "Word of God" are very timely. It is common in religious papers thus to style the book. The "Word of God," in a biblical sense, always applies to Christ; but "the word of God" means a word or message from him just as we would speak of a message from anybody else. In this sense the Bible may be called "the word of God." Even the correct *Sunday School Times* commonly speaks of the Bible as "the Word of God" because "that is the name of the book." But that is an unusual name for it, not in general use. As a book the Bible should be called the *Bible*. That word has more dignity than any other. Some words have the right of way over all others, and the majestic word WORD is one of them.

## SOME KIND WORDS AND SUGGESTIONS FOR THE HOME DEPARTMENT.

Dear Brother:—I have been expecting to see some of "the friends" take an interest in your suggestion to state their views upon the whereabouts and condition of the departed, immediately after their death. Not seeing any thing upon the subject, and feeling that your invitation is worthy of serious thought, I therefore, after some deliberation, have concluded to offer a few lines. In doing so I beg to state that it is approached reverently, and I trust with the forbearance of yourself, and the friends may at least help to excite enough interest in the matter to draw an expression from others more competent and better informed to handle such a momentous and all-important subject.

First, the only authoritative source of information upon the subject is the Holy Bible.

Second, the most reliable and unquestionable writer or individual must be one who has passed through death from life in this world down to death and back into life again. This at once narrows the authorities down to the Lord Jesus Christ.

Third, at death of the body the condition of the subject is transformed or changed from a corporeal or earthly being to a spirit being, of which *absolutely nothing* is known as to their being, limitations, or abode. A spirit's nature or possibilities are not defined and are undefinable; in fact, it is questionable whether the mind of man is endowed with faculties for comprehending the spirit estate in any measure.

Our Lord's disciples desired information of him regarding this subject, to which he replied, "In my Father's house are many mansions, and I go to prepare a place for you, that where I am there ye may be also." WM. B. HESS, SR.

Cleveland, O.

"WHERE WILL THEY EVER GET ALL THE BRIMSTONE?"

Dear Mr. Root:—In your Home paper, Oct. 1, you speak of "fire and brimstone." This reminds me of an interesting anecdote related by the Rev. Mr. Rozelle, of Philadelphia. Last winter, when we were in St. Petersburg, he preached one sermon in Grace Church (Baptist). His text was, "Whatsoever a man soweth, that shall he also reap." It was the best sermon on that subject that I ever heard; and to illustrate one point he used the following: Once a devoted Christian lady was discussing the subject of eternal punishment with an infidel. He said, "Now, madam, you don't suppose there is such a place as the Bible describes—a place of fire and brimstone?"

"I certainly do."

"Well, I can prove to you that it can't be so. Just think of all the people who have lived since the creation of the world, and will live down to the end of time. Where could they ever get the brimstone?"

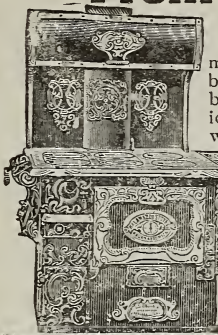
"Laws!—don't you know that everybody takes his brimstone with him?"

How true! we certainly do take our conscience with us. W. C. GAULT.

Savannah, Ohio, Sept. 6.



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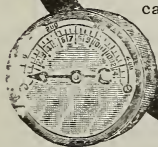
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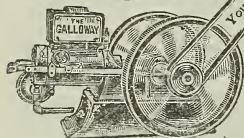
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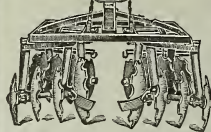


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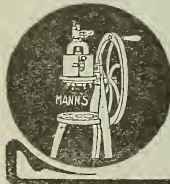
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# FALCON QUEENS

WE HAVE in charge of our Queen Department Mr. Leslie Martin, who has had wide experience in the queen business, having been the queen-breeder in the apiary of the U. S. Department of Agriculture, Washington, D. C., for several seasons, as well as privately conducting the Birdcroft Apiaries in Tennessee since that time. His queens have become famous, and it is with pleasure we offer his services to our customers in the management of this department.

Our "Falcon" Queens are unexcelled in honey-gathering qualities; they winter well, and are gentle. They cap their sections snow-white, and breed early in spring.

Our Mr. Martin is particularly an authority on Caucasians, as he bred much of the stock sent out by the U. S. Department of Agriculture which other breeders are using.

Get our Improved "Falcon" Queens, and increase your honey yields.

## Price List of "Falcon" Queens

Three-band and Golden Italians, Caucasians, and Carniolans

| BEFORE JULY 1        |                                        |  | AFTER JULY 1                          |  |  |
|----------------------|----------------------------------------|--|---------------------------------------|--|--|
| Untested.....        | One, \$1.00; six, \$5.50; 12, \$10.00. |  | One, \$ .75; six, \$4.25; 12, \$ 8.00 |  |  |
| Select Untested..... | One, 1.25; six, 6.75; 12, 12.75.       |  | One, 1.00; six, 5.50; 12, 10.00       |  |  |
|                      | Tested, \$1.50 each                    |  | Select Tested, \$2.00 each            |  |  |

All queens are reared in strong vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on reverse side of the cage-cover. Safe arrival and satisfaction guaranteed.



## Falcon Square Jars

Honey can not be put up in more attractive packages for exhibition purposes or the grocery trade than in glass, and for this purpose the square honey-jar is best and most convenient, besides economizing space. Prices:

|                               |                           |
|-------------------------------|---------------------------|
| 5-oz. with cork stoppers..... | { \$2.25 per crate of 100 |
|                               | { \$1.25 per crate of 50  |
| 8-oz. with spring top.....    | { \$3.75 per crate of 100 |
|                               | { \$2.00 per crate of 50  |
| 1-lb. with spring top.....    | { \$4.75 per crate of 100 |
|                               | { \$2.50 per crate of 50  |

The glass top with spring attachment is the only absolutely safe method of bottling honey, as corks and screw-caps will leak. Still, we furnish the 1-lb. and the 8-oz. jars with corks, for those who desire them, at 75 cts. per 100 less and 40 cts. per 50 less than with the spring top. We do not sell less than crate lots.

**W. T. Falconer Manufacturing Co.**  
Jamestown, New York, U. S. A.

# Practical **BEE-BOOKS** Popular

A complete treatise on the subject.

Fully illustrated.

## The A B C of Bee Culture

A text-book for the beginner and advanced bee-keeper.

Cloth-bound, \$1.50 postpaid.  
German edition, \$2.50 postpaid.

### The Life of the Bee

*Maeterlinck*

A romantic story of the life inside the hive. A masterpiece of fine writing.

Price \$1.40 postpaid.

### The Bee People

*Margaret W. Morley*

A bee-book especially for children. Illustrated.

Price \$1.50 postpaid.

### The Lore of the Honey-bee

*Tickner Edwardes*

A history of bees and their masters from the earliest times. One of the most fascinating books ever written on the subject.

Price \$2.00 postpaid.

### Bee-keepers' 10c Library

Includes twenty-nine booklets neatly bound, each giving practical hints on some phase of bee-keeping. Of great value to beginners.

Price 10 cents each.

### How to Keep Bees

*Anna Bottsford Comstock*

A most entertaining and practical book for the beginner. Tells a beginner's experience in a way to help other beginners.

Price \$1.10 postpaid.

### The Swarthmore Library

*E. L. Pratt*

A series of booklets on the scientific side of bee-keeping and queen-rearing. Full of valuable information.

Price 25 cents each.

### Doolittle's Queen-rearing

*G. M. Doolittle*

The only comprehensive book on the subject now in print. Entertaining as well as practical.

Price 75 cents postpaid.

### Wax Craft

*T. W. Cowan*

Beautifully printed and bound. Treats of the subject fully.

Price \$1.00 postpaid.

### Cook's Manual of the Apiary

*A. J. Cook*

Covers practical management of the apiary, anatomy and physiology of the bee, and bee botany. Completely revised in 1902.

Price \$1.15 postpaid.

### AMERIKANISCHE BIENZUCHT

*Hans Buschauer.*

A hand-book for German bee-keepers. Neatly bound and illustrated.

Price \$1.00 postpaid.



## Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

### Honey and Wax for Sale

FOR SALE.—New alfalfa honey, best quality, new cans and cases, 7½c. H. E. CROWTHER, Parma, Idaho.

HONEY-BROKERS.—We offer a car of water-white sage at 6½ cts.; car lot of amber at 5½ cts. per lb. FREEMAN & FAIRCHILD, Redlands, Cal.

FOR SALE.—Fancy extracted alfalfa honey, thoroughly ripened, rich and thick. If you want honey that will "taste like more," try a 60-lb. can for \$5.50. A. A. LYONS, Rt. 3, Fort Collins, Col.

FOR SALE.—Clover and raspberry honey mixed in new 60-lb. cans. Well ripened and of fine flavor. Sample, 10 cts. Price of sample may be deducted from order. JAMES MCNEILL, Hudson, N. Y.

HONEY FOR SALE by members of the Michigan Beekeepers' Association. For free annual booklet giving names and addresses of members address the Secretary, E. B. TYRREL, 230 Woodland Ave., Detroit, Mich.

FOR SALE.—Extracted honey, tupelo, 8½ cts. per lb.; light amber, 8¼; sage, 9; all in 120-lb. cases; quantities less; samples, 10 cts. I. J. STRINGHAM, 105 Park Place, New York City.

FOR SALE.—Fancy extracted alfalfa and basswood honey, \$5.50 per 60-lb. can; \$10.75 per case of two 60-lb. cans; \$10.00 per case in quantities of 10 cases or more. ROBT A. HOLEKAMP & SON, 4263 Virginia Ave., St. Louis, Mo.

FOR SALE.—My new crop white-clover and basswood extracted honey, put up in brand-new 60-lb. cans; two cans to a case, at 8¼ cts. per lb. by case of 120 lbs., or 9 cts. per lb. for single 60-lb. can; 8½ cts. per lb. for five-case orders or more, F. O. B. Flint; cash with order. LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Our crop of clover comb honey in 4x5 plain sections; also extracted of the following kinds: Clover, raspberry, basswood, and buckwheat. Not a pound of the above honey was extracted until after the close of the honey-flow. The fact is, there is none better on the market. State which kind you prefer, and the amount you can use, and we will quote you our lowest cash price and mail you a liberal sample. Remember we are specialists, and understand thoroughly the production of extracted honey. E. D. TOWNSEND & SONS, Remus, Mich.

FOR SALE.—The finest honey produced in my forty-five years as a bee-keeper. All honey left with the bees until after the close of the honey season; ripe, clear, and of exquisite flavor. The above is from our bee-yards in Northern Michigan; can also supply fine amber fall honey, just now taken off the hives at our home yard. State kind and amount wanted, and we will quote prices. Samples free.

O. H. TOWNSEND & SON, Otsego, Mich.

Extract from a letter from good judges:

Mr. O. H. Townsend:—We are in receipt of your favor of the 17th, and the sample of honey. We believe it would be impossible for the bees to gather finer honey than the sample submitted. We regret to say that we have already bought all the honey we care to at the present time. Thanking you for the offer and the privilege of tasting such fine honey, we remain Very truly yours,

Middlebury, Vt., Sept. 20.

J. E. CRANE & SON.

All honey from our Northern Michigan yards is like the sample referred to above. Try some and note the smile of satisfaction it will produce.

HIGHLY FLAVORED HONEY.—I have just returned from a week's vacation in Northern Michigan, where I helped my brother extract honey gathered from the wild red raspberry. I thought I had seen honey before with a decided raspberry flavor; but *this* lot of honey certainly has a stronger, richer raspberry flavor than any honey I ever before tasted. I wish that you could taste it. Send me 10 cents and I'll mail you a sample. Ask for the strong-flavored honey. This honey is put up in new 60-lb. tin cans, and the price is 10 cts. a pound—\$6.00 for a can.

W. Z. HUTCHINSON, Flint, Mich.

### Honey and Wax Wanted

WANTED.—Comb and extracted honey. State quantity, kind, how put up, and lowest cash price you will take. E. R. PAHL & CO., Milwaukee, Wis.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water St., Chicago, Ill.

WANTED.—White honey. State kind, how put up, and lowest cash price. CHAS. KOEPPEN, 1508 Main St., Fredericksburg, Va.

I will pay 7¼ cts. per lb. for gilt-edged white-clover extracted honey laid down; also ½ ct. more per lb. for white-clover comb honey than other responsible parties will offer who will buy all grades put up in light rough boxes. B. WALKER, Clyde, Ill.

### Wants and Exchanges

WANTED.—A carload of bees. State kind, and kind of hive. I. B. PERRINE, Blue Lake, Idaho. (Via Twin Falls.)

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—100 colonies of bees within shipping distance of Live Oak, Fla. FRANK W. MORGAN, Monticello, Ill.

WANTED.—On shares, two or three hundred hives of bees for the season of 1910; two seasons' experience in the Alexander apiary at Delanson, N. Y. GEORGE SMITH, Rt. 2, Thompsonstown, Pa.

WANTED.—By you—best goods most promptly; in other words, "Pierce service, Root quality." I buy by carloads, and can supply you at once from one of the best shipping centers in the country. EDMUND W. PEIRCE, Zanesville, O.

### Real Estate

WANTED.—Farms and businesses. Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. AMERICAN INVESTMENT ASSOCIATION, Minneapolis, Minnesota.

FOR SALE.—80 acres, all in cultivation or pasture; a good 7-room house, cellar, 2 cisterns and well; new barn, 40x50 ft.; granary, hog and chicken house, etc. Necessary fence, partly woven wire. All underlaid with a 7-ft. vein of coal. One mile from mine; two miles from a good town; 50 miles southeast of St. Louis; school 60 rods from house. A good honey trade and apiary go with the place, at \$50.00 per acre. For further particulars address WM. DARBY, Coulterville, Ill.

### Help Wanted

WANTED.—Two first-class men to sell honey. THE SNYDER BEE AND HONEY CO. Kingston, N. Y.

## Bees and Queens

FOR SALE.—Golden-all-over queens, and bee-keepers' supplies. T. L. McMURRAY, Silverton, W. Va.

First prizes Connecticut State Fair for Italian bees and queens, 1909. A. W. YATES, Hartford, Ct.

Extra-fine queens of the red-clover strain, bred by the originator. Fine queens for breeders' use, a specialty. F. J. WARDELL, Uhrichsville, Ohio.

FOR SALE.—40 colonies of bees, Root and Moore stock; combs built on wired foundation; cheap for cash. H. P. HENNINGSEN, 927 Alabama St., San Francisco, Cal.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey.

DR. GEO. D. MITCHELL & CO.,  
340 Fourth Street, Ogden, Utah.

FOR SALE.—175 swarms of bees at a bargain if taken soon; 8 and 10 frame 2-story hives with Hoffman frames, built from wired foundation. If interested call on or write. W. H. RAILS, Orange, California.

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Bant, and Caucasian queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free.

W. H. RAILS, Orange, Cal.

## For Sale

FOR SALE.—Bee-supplies at factory prices.  
D. COOLEY, Kendall, Mich.

FOR SALE.—New unhulled white-sweet-clover seed, 15 cts. per lb.; postage, 8 cts. per lb. extra.  
ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—On account of poor health, a manufacturing plant consisting of mill, lot, machinery, etc. Price \$2850. Address box 39,236, care GLEANINGS.

FOR SALE.—Mann's green-bone cutter, perfect condition, cost \$18; price \$10; twenty-five 24-lb. shipping-cases for 4¼x4¼ sections in flat, \$2.75.

H. J. AVERY, Katonah, N. Y.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.  
THE PENN CO., successors to W. P. Smith, Penn, Miss.

FOR SALE.—700 wide frames for the production of fancy comb honey. They hold eight sections each; fit Langstroth or Hoffman frames; cost \$35.00; will sell for \$17.50. Also two-horse gasoline-engine, O. K. condition; cost \$60.00; \$25.00 takes it, or will exchange it for beeswax or extracted honey.

L. F. HOWDEN, Fillmore, N. Y.

## Poultry

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.  
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Chicks, 8 cents each; eggs, \$4.00 per 100; shipped anywhere.  
CULVER POULTRY FARM,  
4086 Main St., Benson, Neb.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies.  
ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies.  
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to  
T. F. BINGHAM, Farwell, Mich.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions.  
E. E. LAWRENCE, Doniphan, Mo.

Golden and red-clover Italian queens. Greatly improved facilities for 1910.  
WM. A. SHUFF,  
4426 Osage Ave., Philadelphia, Pa.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular.  
A. W. YATES, 3 Chapman St., Hartford, Conn.

FOR SALE.—High-grade red-clover and Golden queens. Safe arrival and satisfaction guaranteed. One, 75 cts.; six, \$4.00; dozen, \$7.50.  
SIRES BROS. & CO., North Yakima, Wash.

QUEENS.—Improved red-clover Italians, bred for business—June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, \$1.00 each. Safe arrival and satisfaction guaranteed.  
H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. For sale, several tons of fall honey.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

## Fruit-Growing

and Bee Culture are two great allied industries. We want every reader of this journal to write us for a free sample copy of "The Southern Fruit Grower," or send 10 cents and it will be sent you on trial for three months.

The Southern Fruit Grower, Chattanooga, Tenn.

## Mr. Bee-Man:

You can save time, worry, and money by ordering your supplies for next season now.

I have a full line of Hives, Supers, Sections, Foundation—in fact, every thing you need in the apary. If you do not have a catalog, send for one to-day.

182 H. H. JEPSON  
Friend St. Boston, Mass.

Phone Haymarket 1489-1

### Honey Markets continued from page 5.

CINCINNATI.—The market on comb honey is exceedingly brisk. In quantities of from 100 to 200 cases it is selling at 14¢; retail, at 16¢. Extracted table honey is brisk, sage selling at 8¢ to 9¢; amber in barrels, fair demand at 6 to 6¢. Beeswax is slow at \$33.00 per 100 lbs. The above are our selling prices, not what we are paying.

Oct. 22.

C. H. W. WEBER & CO.

PHILADELPHIA.—The demand for comb and extracted honey has been very heavy during the last ten days. Large lots have been moved at good figures. There has also been quite a little honey shipped in which contains a shade of honey-dew which has been selling at a low price. We quote fancy white, 16 to 18¢; No. 1, 14¢; amber, 13¢; extracted white, in five-gallon cans, 9¢; amber in barrels, 6¢; in cans, 7¢. Beeswax, 29¢.

Oct. 22.

WM. A. SELSER.

LIVERPOOL.—The honey market is firm, with good inquiry. We quote one pile of Chilean sold at \$7.44 per 100 lbs.; two of the same at \$6.72; white Haitian, \$6.96 to \$7.68; Jamaican, \$6.24 to \$7.20. The nominal value of Peruvian is \$3.54 to \$4.50; California, \$9.12 to \$9.84. The beeswax market is dull. We quote Chilean at \$33.88 to \$38.72 per ton. Nominal values are as follows: African, \$32.67 to \$33.83; American, \$33.88 to \$37.51; West Indian, \$32.67 to \$33.60.

Oct. 14.

TAYLOR & CO.



## SPECIAL NOTICES

BY OUR BUSINESS MANAGER

### SWEET-CLOVER SEED.

We want to hear from those who have sweet-clover seed in quantities for sale. We have not secured our usual supply, and are having a brisk demand, so are liable to run short before another season's crop can be gathered.

### JAPANESE BUCKWHEAT.

We have secured an extra-choice lot of Japanese buckwheat for seed; and rather than carry so much over for the spring trade we offer it for shipment now at a special low price. For prompt cash orders we will sell one bushel for \$1.15; 2 bushels, \$2.10; 10 bushels, \$10.00, bags included. If you can use 50 or 100 bushels, write for special price. Seed is recleaned, and 50 pounds to the bushel.

## Special Notices by A. I. Root

When the next issue comes out, Mrs. Root and I, Providence permitting, will be in our Florida home at Bradentown, Manatee Co.

### "THE FAMOUS GRUNDY METHOD."

As I have been criticising this book rather severely for a year past, or more, particularly because of the price, \$2.00 for a small paper-covered book, I deem it no more than fair to state here that Mr. Fred Grundy has cut the price down a half—that is, for \$2.00 he will furnish the book and GLEANINGS for one year free.

While I am about it, I will state that Mr. Grundy has given us another excellent book entitled "A Fortune in Two Acres." Price 50 cents. Address Fred Grundy, Morrison, Ill.

### "ONE HUNDRED FORMULAS AND RECIPES FOR POULTRYMEN."

The above heading is the title of a little book put out by the *Poultry Record* folks, Carey, Ohio. It contains nearly all if not quite all the secrets that have been advertised and sold up to date. There is one thing I particularly like about this exposé of secrets. After giving a process the author expresses his opinion of it. For instance, he says, in regard to the dollar secret for feeding soda and epsom salts to chickens to destroy vermin, "I consider the remedy of no value as a mite-killer, but it may be of some value as a tonic." In regard to the secret of telling a laying hen, he adds at the end, "The advertisement is only to catch a few dollars." The book is rather small for 25 cents—only 20 pages; but as it contains secrets that have cost some of our friends a good many dollars, it ought to be a good investment—especially for "us chaps" who have been sending our quarters and dollars for all the secrets advertised. By the way, that Missouri woman is still advertising her secret for sorting out the fertile eggs before they go into the incubator; and the worst part of it is, there are several poultry-journals that still accept and insert the advertisement.

### THAT HOME-MADE INCUBATOR.

I omitted to say in the proper place that the thermometer should be immersed in the water in the tea-kettle. The bulb should be two or three inches in the water so that the top may project enough so that the temperature may be read easily. Now with this flannel covering the outside of the kettle, the thermometer needs to be up to 110 or 111, as I have explained, to bring the top of the eggs in contact with the kettle (or flannel, rather) up to 103; and the eggs will not be harmed if the temperature should rise to 120 or even a little more. I think that the neighborhood of 118 or 120 is a better temperature when the eggs are hatching; and I have some chickens coming out now, this 25th day of October. When the eggs are pipped, we think it best to have as many as possible pressing against the warm kettle, removing the shells out of the way and putting the chicks on the top shelf or nursery as I have explained. Where you have one or more shelves it accomplishes this nicely. Oh! by the way, Huber is as happy this morning because his baby (only four months old) has two teeth, as is his father with his chickens just hatching in his newly invented incubator.

### THE HOME DEPARTMENT OF GLEANINGS.

All along through the years since this department was started, there have been more or less requests to have a selection made of Our Homes in book form. The matter came up again recently; but I am rather inclined to think we should give our attention to the future rather than to the past. But I might remind the friends that in 1881 there was such a call for back numbers that we printed two small books, Parts I. and II. As you know, I do not believe in big prices for a little book, and never did; so these books are sold at 10 cts. each, each one containing about 50 pages, GLEANINGS size. Well, there are nearly 200 of these old selections of Our Homes, and you can have them, while they last, the two for 15 cents. If wanted by mail, add 4 cts. for postage. As I glance over my work in trying to lift up humanity during the last 35 years, it looks to me as if there really were many valuable lessons in the two pamphlets. There is much said, for instance, about building up a home, and having things convenient for the least expenditure of time and money. Therefore, friends, if any of you would like to see a sample of the Home Papers in their early stages, send us 12 cents for Part I., or 19 cents for the two.

### FIRELESS BROODERS; SOMETHING TO FURNISH HEAT FOR THE FIRST WEEK OR TWO.

While heating bricks to keep the new chicks warm during a cold spell down in Florida I thought several times of the little foot-warming stoves that we kept for sale something like ten years ago. These are kept warm by means of a stick of fuel lighted with a match. The expense of the heat is only about one cent a day. Now, this arrangement would be much simpler than a lamp. It could not set any thing afire, it occupies very little space, and does not need any of the machinery necessary to accommodate a lamp to keep it burning. Besides, there could be no possible danger of an explosion. I have just interviewed Huber, who has had considerable experience with these cheap little stoves. I think they sold at 40 cents, with quite a lot of fuel thrown in. He agrees with me that they would be just the thing, but for the fact that the heat fluctuates too much, going up and down, and, worst of all, frequently going out entirely. I think I have read somewhere, however, that the fuel has been recently improved so that a stick of it will burn until every bit of it is consumed without going out. Can anybody give me any information in regard to the matter?

## BOOK REVIEWS.

### THE FAMILY-READING PROBLEM.

To find reading that satisfies one's craving for the bright and attractive, and which is at the same time perfectly suitable for impressionable young people, is at times difficult. The best magazines are admittedly published for mature readers only. *The Youth's Companion*, *Companion Building*, Boston, Mass., alone is for all the family. While the editors keep in mind the eager desire of the young for tales of action, enterprise, and adventure, these stories in *The Companion* are so well written as to fascinate men and women in all stages of life's journey. And this is true not only of the fiction in *The Companion* but of the entire contents. The articles, by famous writers, convey knowledge that is useful to the wisest and most experienced as well as to the immature. In short, *The Companion* solves the reading problem for the entire family. It is entertaining and it is "worth while."

Every new subscriber will find it of special advantage to send at once the \$1.75 for the new 1910 volume. Not only does he get the beautiful "Venetian" Calendar for 1910, lithographed in thirteen colors and gold, but all of the issues of *The Companion* for the remaining weeks of 1909, from the time the subscription is received.

## Convention Notices.

The annual meeting of the Middlesex Bee-keepers' Association will be held in the City Hall, London, Ont., Nov. 6, at 10:30 A.M. and 1:30 P.M. All bee-keepers are cordially invited. E. T. BAINARD, Sec.

Lambeth, Ontario.

The Northern Michigan Bee-keepers' Association will hold its next annual session at Mancelona, Mich., Dec. 1 and 2. We are holding this meeting at this time to get the attendance of those who can not get away during the busy month of April—the usual meeting month. A rousing meeting is expected. Come! East Jordan, Mich. IRA D. BARTLETT, Sec.

## BEE-KEEPERS OF THE NORTH

BEE-KEEPERS OF THE WEST

Be Sure to Get Our Prices on

**BEESWAX**

Before selling your season's wax, or  
let us send you our prices for  
working your beeswax into

**Dadant's  
Foundation**

We can use an almost unlimited  
quantity of beeswax, and we are  
buying all the time. . . . During  
the season of 1909 we handled over  
150,000 pounds of beeswax. . . .  
If your honey supply is short we can  
supply you with white or amber  
honey. . . Send for prices at once.

**DADANT & SONS**  
Hamilton, Ills.

BEE-KEEPERS OF THE EAST

## BEE-KEEPERS OF THE SOUTH



## Attention..... Trappers

Get started right for  
1909-1910 by sending  
for our printed  
matter.

We want to get in touch with our friends, the  
trappers and dealers, all over this country. To  
all who are interested we are anxious to send  
our helpful printed matter. We want to SHOW  
YOU that we are more than capable of backing  
up our claim.

Direct shipment; quick, sure, good  
returns; honest grading; financial  
reliability; square dealing, and every  
other good point offered by any  
house or houses are all centered  
here. . . . Can you expect more?

50 years' honorable dealing.  
No tricky practices.

**Traugott Schmidt & Sons**  
Detroit, Mich.



WITH A FULL LINE OF

## Bee-keepers' Supplies

We can please you with quick shipments  
and satisfactory prices and service. Our  
goods are the ROOT CO.'S make, hence  
there is nothing to fear as to quality. A  
card will bring you our 50-page catalog by  
return mail. Send us your inquiries. We  
are able to supply you on short notice Ital-  
ian bees, queens, and one, two, and three  
frame nuclei.

**John Nebel & Son**  
**Supply Co.** High Hill, Montg. Co., Mo.

## WILL YOU be ONE of 6000?

Next year the AMERICAN BEE JOURNAL will complete its fiftieth or Jubilee year.  
We desire to celebrate it by an increase of 6000 new subscriptions to our present list.  
That would mean an addition of something like 450 names per month, beginning with  
November, 1909. Will YOU be one of the 6000? : : : : : : : :

Just now, and until January 1, the price is 75 cts. a year; after January 1, \$1.00 a year. Why  
not save 25 or 50 cts. by sending 75 cts. or \$1.50 before January 1, and let us put your name on  
our list for one or two years from January 1? To new subscribers for 1910, we will throw in  
the rest of this year's (1909) numbers free. Better do it now. If you have never seen the old  
AMERICAN BEE JOURNAL, send for free sample copy. Address : : : : :

**George W. York & Co., 146 W. Superior St., Chicago, Ills.**

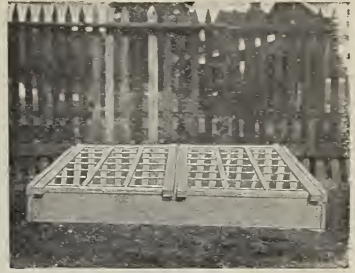




Preparing the ground.

# Plants need light

# You never cover



Planted and growing

Sunlight Sash. Your plants under them get all the light all the time. The heat stored all the day is held securely over night. The result is bigger, stronger, earlier plants

In zero weather under Sunlight Sash your plants are as safe as in open air in May. Never any worry or slightest risk about sudden changes in temperature.

Saves expense—saves all the labor of covering and uncovering. Boards, shutters, and mats are eliminated.

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